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ANTIQUITY

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Edited by O. G. S. Crawford, F.S.A.

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A Quarterly Review of Archæology

VOL. II No. 5

MARCH 1928

Editorial Notes

WHEN, last September, we asked our readers to contribute towards the UR EXCAVATIONS, we little guessed what wonderful discoveries were about to be made. In the present number we are able to give the first full published account of them, specially written for ANTIQUITY by Mr Woolley himself; and an appreciation, by Dr Hall, Keeper of Egyptian and Assyrian Antiquities in the British Museum, of the general position reached at Ur. Mr Woolley's five years' previous work had shown that here on one site were combined great excavating skill and a remote and almost unknown phase of civilization—the oldest phase revealed anywhere. Now there has been added the glamour of buried treasure. For once a great find of gold and silver objects has also great scientific value. Until Mr Woolley found the foundation-tablet of A-anni-padda in 1923 at Tell el Obeid [al 'Ubaid], 4 miles from Ur, it was permissible to regard the first dynasty of Ur as legendary. Now such a view is impossible. The existence of Mes-anni-padda, the first king of the first dynasty, was made still more certain by the discovery of the seal of his wife, Nin-dumu-nin. But the latest finds go back even behind the first dynasty, which we now know to have been preceded by a line of kings and queens hitherto unknown and unmentioned in any of the king-lists. Fortunately the names of some are given by inscriptions. Who were King A-bar-gi and Queen Šub-ad whose graves were already

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forgotten 5000 years ago? That they were no mere tribal chiefs is proved by the sumptuous possessions they hoped to take with them into another world—the gold jewelry and semi-precious stones, the gold and silver vases, the beautiful inlaid harp, the bullock waggon, the slaughtered soldiers and attendants. That their subjects had advanced far along the road of culture is proved by these objects, some of them requiring much technical skill, by their use of the true arch, by their art. All these things belong to the period 3500–3100 B.C.—we give the possible range—and even then we are plainly far removed from the beginnings!

✱ ✱ ✱

The British Museum and the Museum of the University of Philadelphia are to be congratulated upon the marvellous success of their joint undertaking. Seldom has 'digging for knowledge' been so amply recompensed. Virtue is, of course, its own reward; but the reward is not always thus gilded. The practical effect, moreover, is considerable. Archaeological research depends ultimately upon public support when it involves the expenditure of much money. Had Mr Woolley found no gold at all and no objects of any intrinsic or spectacular value, he would nevertheless have made an epoch-making discovery; but it would have remained unknown to all but a few specialists. Apart from such secondary—but important—considerations, gold objects have a real superiority over those of silver and copper and some other materials, for gold is incorruptible; it does not oxidize or tarnish and *objets d'art* made of it look today as new as on the day they were made. Hence the extraordinary freshness of the animal figurines (plate II), of the leaves and flowers of Queen Šub-ad's cape (plate I), and of the inscribed name of Mes-kalam-dug (plate VI, 2). The same good fortune preserves for us, though less perfectly, the inlaid designs of limestone and shell.

It is clear from Mr Woolley's allusions (*e.g.* on pages 11–12) that he still has in store a rich treasure of art, without taking into account what the next few weeks' digging may reveal. The silver boats, the waggon, the head-pieces, the harp, the jewelry and inlay-work are still undescribed, and we must wait in patience. Discoveries such as these throw upon the excavator an immense burden of labour and responsibility. No one should miss the annual exhibition at the British Museum this summer. It should be worth travelling from the ends of the earth to see.

EDITORIAL NOTES

One of the best ways of conjuring up the past is to go there for a holiday. No time-machine is required for the journey. Within a thousand miles of London there are people still living a life as primitive as that of our prehistoric ancestors. The Berbers of the Aures Mountains are not of course connected with us, nor is life in North Africa today the exact counterpart of life in pre-Roman Britain. But there is much in common, as readers of Captain Hilton-Simpson's article in our last number will have learnt. In order to see something of this life at first hand, if only as a tourist, the Editor spent his Christmas holiday in the Aures district, away from roads, travelling on a mule. It was a strange experience ; one felt as if one was living in a past age. One ate good whole-meal bread, made from flour ground on hand-mills (see *ANTIQUITY*, i, plate 7 facing page 400) that might have been found at Rotherley or Glastonbury. One fed with wooden spoons from a common hand-made earthen bowl that might have come from All Cannings Cross ; and one slept in early Iron Age quarters ! The illusion—for a British archaeologist—was the more complete in that much of the pottery used is of the 'finger-tip' type (see *Antiquaries' Journal*, ii, 1922, page 29), characteristic of the late Bronze and early Iron Ages. (In answer to an enquiry it was stated that the 'finger-tip' indentations are applied, to raised ribs of clay or to the lip, with the finger-tips *or* with a pointed stick indifferently). Some of the smaller, globular pots are used for cooking or steaming food in ; the larger serve also as chimney-pots, the bottoms being knocked out. In one modern cemetery nearly every grave had one of these small bowls lying on it.



It was a pleasant surprise to come accidentally upon the old quern-maker portrayed in plate 7, referred to above, squatting in the same spot, chipping away at a quern exactly as he appears in the picture, taken before the war. One never tired of watching the craftsmen at work and admiring their extraordinary skill. (To them this interest was inexplicable, so accustomed are they to the sight). With no tool but an adze (mounted in a short handle, just like our Iron Age ones, but flanged, not socketed) the village blacksmith shapes the simple parts of the wooden plough and then fits to it the iron shoe he has just forged. Every blow falls where it is meant.

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The villages are almost entirely self-supporting. From sheep to rug, bag or carpet—from cultivation-plot to table—every process is carried out, and nearly every tool is made, at home. Almost the only imports are salt and occasional luxuries of European origin—a table-cloth or chair, an iron kettle or glass tumbler, a bottle of aniseed. Individuality and good manners still survive and count, but there is no art. Life indeed is hard and unattractive, especially for the women who carry the water and gather fuel. Indeed the winter visitor sees one side only; the resident sees the other, when summer brings heat, dust and flies. The simple life may be all right from outside, but those who practice it of necessity usually hold strong views about it.

❧ ❧ ❧

The comedy of GLOZEL (first exposed in ANTIQUITY) would have ended in a shout of laughter had not the daily press—with one or two exceptions—been completely hoodwinked. Between 4 November and 8 November the International Commission carried out investigations at Glozel. Objects were found—amongst them being an 'inscribed' clay tablet; and so the reporters concluded that all was well. To them a find is a find, no matter how it is made, or what the stratification. This favourable impression was naturally strengthened by the daily bulletins with which Dr Morlet fed them and which, for lack of more solid food, they hungrily devoured through the bars of the enclosure. No authoritative pronouncements were made, the members of the Commission having very properly agreed to maintain silence. On 23 November *The Times* published an article by the Editor of ANTIQUITY headed 'A Sceptic on Glozel'. The *Paris Daily Mail*, however, assuming that 'what I say three times is true', provided its readers with the following choice news-items:—'The genuine nature of the finds, whatever their date, is now beyond dispute, and is accepted by all the members of the Commission' (8 November); 'The Commission's report which will be issued shortly'—it was issued six weeks later—'will, I understand, declare the absolute authenticity of the finds and the complete absence of fraud, but will not venture a final and definite decision as to their date' (14 November);

EDITORIAL NOTES

'the majority of the members of the Commission, it is understood, are quite satisfied that the finds are absolutely genuine, and scout the suggestion of trickery' (20 December). Actually of course the Commission reported unanimously that (with a few insignificant exceptions mostly to do with the glass factory) the finds were not ancient. On 7 January, *The Times* and the *Manchester Guardian* published a damning letter from Sir Arthur Evans, who made a special visit to Glozel; he expressed surprise that such obvious fakes should have deceived anyone. In the middle of January was published the report of M. Champion, technical assistant at the S. Germain Museum, of which M. Reinach is still the Director. Charged with the minute examination of the objects themselves, M. Champion reported that they were forgeries, and that files and other iron tools had been used in their manufacture (*Revue Anthropologique*, 1928, nos. 1-3, E. Nourry, 62 Rue des Ecoles, Paris). These triple blows have demolished Glozel; after a short but gay life it is dead. On the field of battle lie the corpses of several learned reputations.



With the sequel in the law-courts we are not here concerned. We are told that one of the cases has been got up merely as a newspaper stunt, offers having been made to pay the expenses of *both* parties! Readers who wish to read more about this silly business will find an excellent and witty summary in our contemporary the *London Mercury* (January 1928, pp. 229-33), which has not, like the *Mercure de France*, been deceived, and which has throughout maintained a critical attitude, as one would have expected. The Commission's report is published as a supplement of the *Revue Anthropologique*, 1927, nos. 10-12; M. Champion's is in the following number. In the current number of *L'Anthropologie* (vol. xxxvii, 1927, pp. 575-94), is a documented history of the affair; and M. Vayson de Pradenne contributes an amusing little article, 'La deuxième affaire Glozel', to *L'Opinion*, Saturday, 28 January. With the exception of the first, not one of these publications gives ANTIQUITY the credit for leading the attack on Glozel; but French archaeology begins and ends at home, and we may safely leave our neighbours to clear up the mess that has been made. We shall not refer again to Glozel—unless greatly provoked.

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We regret to inform our readers that VOLUME ONE of ANTIQUITY is now out of print. The Editor will gladly buy back at cost price (five shillings each) any copies of numbers 2 (June) and 3 (September) which readers may be willing to dispose of. Copies of numbers 1 (March) and 4 (December) can still be supplied. The price of the bound volume, if it becomes available again, will be two guineas; there is already a long waiting-list.



SUBSCRIPTIONS for the year 1928 are now due and an early renewal by means of the form enclosed with this number will be appreciated.



In the underline of Vol. i, plate 7 facing page 400, for 'Menaar' read 'Beni Fera', and on page 433, six lines from bottom, for the figures in brackets substitute 450-600 A.D.

PLATE I



GOLD HEAD-DRESS OF QUEEN SUT-AD IN POSITION, WITH REMAINS OF HEADED CLOAK, GOLD
PINS, AMULETS AND CYLINDER SEAL

The Royal Tombs of Ur

by C. LEONARD WOOLLEY

THE royal tombs that have been discovered at Ur this winter are remarkable not only for their contents but for their construction, and for the light they throw on Sumerian funeral customs unguessed hitherto.

We have dug some nine hundred graves in this cemetery and the types are well established. There are a certain number of clay coffins; they form a small proportion of the whole and tend to be commoner in the late than in the early period, but do occur even in the earliest time. The normal grave is a rectangular shaft measuring little more than $1\frac{1}{2}$ metres by 1 metre; the bottom of this may be lined with matting and the body, wrapped in a mat, simply laid in it, or there may be a coffin, generally made of wickerwork with wooden stays, occasionally of wood: it contains the body and the more personal ornaments, while the rest of the funeral offerings are deposited by the side of it in the grave-shaft. The grave of the prince Mes-kalam-dug was precisely of this type, distinguished only by its being rather larger than usual and by the extraordinary richness of its contents—the gold wig, the gold bowls and lamp have no parallel in other graves of the class, and the wealth of vases and weapons heaped against the coffin makes a striking contrast to the habitual grave furniture. But all these riches were placed in a plain earth shaft or in a wooden coffin against the shaft's side and the whole area occupied by them was but $2\frac{1}{2}$ metres by $1\frac{1}{2}$: the real contrast here is with the kings' tombs of which four have been now excavated.

For a king's tomb a rectangular shaft was dug which might measure as much as twelve metres by eight, and which was entered by a sloped or stepped *dromos* from the ground surface; the depth of the excavation is difficult to judge. At the bottom of the shaft was built a tomb of stone or stone and brick: it must be remembered that stone, imported from a great distance, was an expensive luxury rarely used in buildings; and when we find as much as four hundred cubic metres of limestone employed in the construction of a single tomb we have *a priori* reason

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to consider it a royal burial-place. In two graves (PG. 779 and 777), one of which I should judge to be the oldest yet found (the other was too thoroughly plundered to afford good criteria for dating), the construction was in stone throughout; the former, which was by far the better preserved, consisted of three parallel chambers (one of them divided into two bays) built of quarry rubble; the rooms, each 5.90m. long and from 2.15m. to 2.60m. across, are roofed with a corbelled vault of the same unshaped stone, but instead of the end walls being carried up straight, the room-corners have been strutted at, or slightly below, the level of the springers on the side walls, and on the curve thus formed the corbelling has been taken round over the end walls so as to produce an apse. In the two other tombs (PG. 789, 800), which actually abut on each other and can only be separated in time by a comparatively few years, the roof is of brick; the stone walls have been carried up to a uniform height, a levelling-course of brick laid along them, and on this built a vault of which the central portion is composed of contiguous rings of true arching and the apsidal ends of corbelled work (plate iv); though here too the influence of the arch construction has made itself felt in that the bricks, each projecting beyond the course below, are laid not flat but with a downward and inward slope secured by the insertion of sherds or brick fragments between the outer ends of the bricks to give a radial joint; here therefore we have a cross between corbel and true domical construction. Beam-holes in the walls shew that the roof was built over a centering; straws adhering to the joints of the brickwork make it clear that the centering was of wood on which was heaped (probably) light earth and straw arranged in the proper curve. The discovery that all these constructional systems were known and used in the fourth millennium B.C. is a revolutionary one for the history of architecture.

The rubble was laid in mud mortar (as was the brick also) and at present the walls and roof look very rough; but originally they were plastered with a smooth and thick coat of lime cement, as were also the floors, at least in the case of the better-preserved tomb PG. 779; presumably the houses of the period were similarly plastered, the tomb being as far as might be a reproduction of the dwelling-place of the living. It is worth remarking that the vaulted building might itself well be a development from the primitive hut of matting spread over bent reed-bundles, the tunnel-like 'house' of the modern native of this part of Iraq.

The two all-stone tombs occupied the entire area of their respective

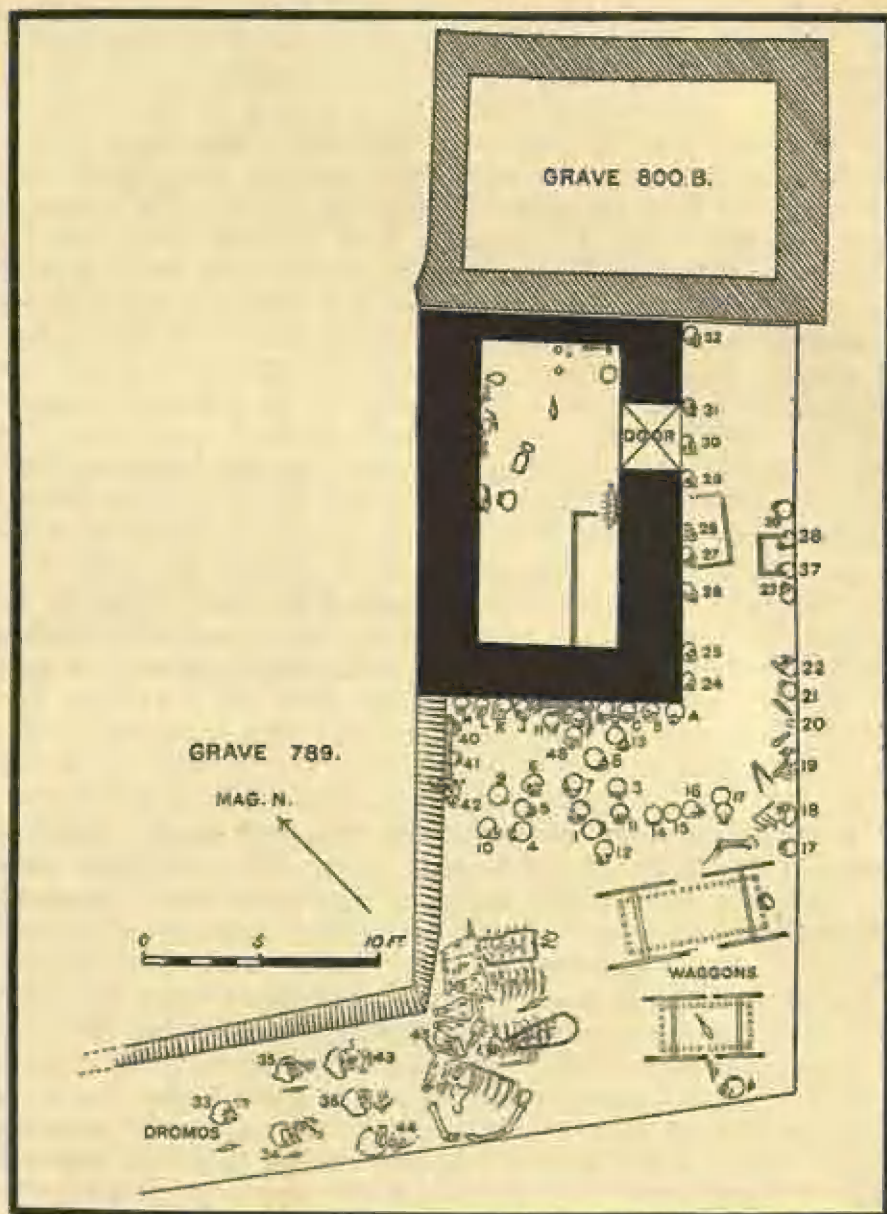


PLATE II



GOLD ANIMAL FIGURES FROM THE SECOND HEAD DRESS OF QUEEN SUDDAD

THE ROYAL TOMBS OF UR

in this narrow space and struck down, to lie as they fell. On the top of them, against the end of the tomb and against the NW side of the shaft, had been placed two wooden statues of bulls; one had a copper head, the other a head of gold and lapis, and the chest of each was decorated with a band of shell plaques engraved with mythological scenes.

In all this we have proof of a funeral ritual unsuspected hitherto in ancient Sumer, a ritual which at this date was only observed in the case of kings, though originally it may have been more general. The discovery opens a wide field for conjecture.

The vaulted chamber of PG. 800, B was built up against the back of that of PG. 789: its shaft (if we are right in associating the two, as we almost certainly are) was nearly conterminous with that of PG. 789 but at a higher level; the floor was flush with the crown of the arch of the older tomb, and it seems most likely that the excavation of this shaft gave occasion for the plundering of the tomb thus exposed. The close connexion of the tombs must be intentional, *i.e.*, due to sentiment, and would shew them to be nearly contemporary; PG. 800 is the grave of a woman, Queen Šub-ad;* PG. 789 might then be that of her husband, the 'King A-bar-gi' whose name appears on a cylinder seal found in the shaft of her grave.

Both tomb and shaft were intact. The queen lay on a bier wearing a gold head-dress of ribbons, leaves, flowers and rings with a big gold pin branched and tipped with mosaic flowers rising above it (plate I); great ear-rings, a coat entirely covered with beads of lapis, carnelian, agate and gold, gold pins, rings and amulets and a necklace of lapis and gold; by her side lay a second head-dress consisting of a fillet of leather covered with minute gold and lapis beads and decorated with gold figures of animals (plate II), ears of corn, bunches of pomegranates and flowers. An attendant was crouched at the head of the bier and another at the foot. The tomb was crowded with offerings. There were golden bowls and cockle-shells of gold and silver containing paints, silver vessels by the score, including a set of eighteen fluted and engraved tumblers, silver lamps, ostrich-shells adorned with incrustation of lapis and mother-of-pearl, vessels in copper and in stone: some of these were piled on the ground, others had stood on wooden shelves along the side and ends of the chamber. Against one wall had been a statue of a cow, in wood, with a silver head.

In the shaft were more vessels of silver and gold, two of the latter

* Š | Sub [ka+šū]-ad | nin.

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beautifully fluted (plate VI, 1), two silver heads of lionesses, apparently from a stool, stone vases including one cup carved in lapis and a bowl of translucent obsidian, a great wooden chest originally decorated with mosaics in lapis and shell, a few tools and weapons of which a set of chisels and a saw were of gold, and sets of short spears with gold and silver points. More remarkable still were two objects—a harp decorated with bands of inlay and with a bull's head in gold and lapis, and a light chariot, not wheeled but of the sledge type represented on the pictographic tablet from Kish, all adorned with inlay and with heads of lions, bulls and leopards in silver and gold. Here too were the victims killed to accompany the dead; the harpist was crouched by the harp, the grooms lay at the heads of the asses which drew the chariot; apart lay the court ladies with their golden head-dresses, a group of men-servants, and by the wooden chest the single bodies of other attendants.

Not only are the burial customs new and the tomb-construction unparalleled hitherto in Sumerian archaeology, but the objects are such as have never before been found in this country; their importance is not confined to Sumer, but our ideas of the early history of civilization as a whole must be profoundly modified by them. In estimating their value as documents the question of date is a prime factor.

At the close of the first season's work on the graves I described the area as containing three cemeteries, an upper Sargonid stratum, c. 2700 B.C.; a stratum labelled by us 'First Dynasty', containing graves which really overlapped that period but tended to be rather earlier; and a 'Prehistoric' stratum of graves to which we might assign the round date of 3500 B.C. At present I feel that the definition holds good except in that the two earlier cemeteries may be continuous, though in that case they represent so long a time that the division into two is scarcely misleading.

While 'stratification' is a convenient term to use it must not be taken too literally; mere depth below the surface gives no mathematical proof of date. This general truth (for it is obvious that at any period one grave may be dug deeper than its contemporary neighbour) is especially applicable to our cemeteries, because the modern ground level has particularly little relation to the ground level of any period during which the graveyard was in use.

The cemetery area lies against the NE face of what is perhaps the oldest part of Ur, a high mound rising in a series of mud-revetted terraces (see *Antiquaries Journal*, vol. vi, p. 386). From this settlement

THE ROYAL TOMBS OF UR

rubbish had been thrown out over the terrace edge until it rose as high as the terrace itself, sloping gradually down and heaped in irregular mounds from the terrace to the low ground at its feet. Wherever it has not been disturbed the stratification of this rubbish-dump is perfectly clear, with its alternating bands of crumbled mud brick, burnt earth, broken pottery, ashes, etc., slanting more steeply as they get lower and nearer to the terrace where the first dump was thrown out, approaching more to the horizontal as the talus rises and spreads out further into the plain. Over this very early rubbish accumulated a thick bed of such mixed soil as one associates with the decay of mud houses, swamping the old contours and levelling up the surface to some extent—there may indeed have been some intentional levelling, though the ground remained far from regular. Then the area came into use as a cemetery and the oldest graves are cut down through the mixed soil into the sloping strata of the rubbish-heap. The ground level rose steadily, so that the general tendency is for the later graves to lie higher than the earlier in their immediate neighbourhood, but the slope was still there, and hummocks, so that in one place the first dynasty graves may be actually higher above sea level than are the Sargonid graves thirty metres away. In the time of the third dynasty of Ur the sw side of the neglected cemetery was used as a building site, and levelling for this meant the cutting down of some of the high ground near the prehistoric terrace and the raising of the slope adjoining; after the Larsa period more levelling was done further to the NE, masses of broken pottery and other rubbish being dumped into the pits and hollows.² Then denudation set in, with the long decay of Ur: when we started work the surface was a dead flat sloping very gently from SW to NE; on the SW the modern surface was below that of the prehistoric terrace, of the great third dynasty building there remained a scrap of wall two or three courses high almost flush with the ground, and at a depth of less than a metre were brick pavements of the first dynasty and Sargonid graves in the surface dust; to the NE we might have to dig down through four metres of post-Larsa rubble filling before we came to what had been surface level at the time of the very latest graves.

² A good deal of the plundering of the graves was done at the times of these levelling operations; the section of the upper soil often shews pits filled with late rubble going straight down into the tomb strata. One such shaft came down right alongside the plundered royal grave PG. 777 and a broken cone of Ur-Nammu was found in it almost at tomb level. But the tomb had probably been robbed much earlier.

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modern surface, the great stone grave PG. 779 at a depth of twelve metres and a half; what is really important is that Mes-kalam-dug's grave intrudes into the shaft cut for the stone tomb. The shaft could not have been dug without disturbing Mes-kalam-dug's grave, had that been the earlier; it follows that the grave is later than the tomb, just as its actual depth would suggest. Now Mes-kalam-dug's grave might by position be about contemporary with queen Sub-ad's—it is nearer the modern surface, but was higher up the original slope—and the decoration of the gold vessels from the two graves is identical; if we assume that the grave of Sub-ad and therefore that also of her husband (?), *i.e.*, PG. 800 and PG. 789, are later than PG. 779, the differences between them already described become most instructive. There is the change of practice whereby the subordinates are buried in the open pit instead of inside chambers; the economy in the use of stone seems to be a step in the process whereby stone was employed freely here, sparingly for foundations under the first dynasty of Ur, and subsequently dropped out of use altogether; the substitution of the true arch for corbel vaulting should mark an advance in architectural knowledge which, if it was really made between the dates of the two graves, would separate them widely. But the two brick-vaulted graves do not bring us down to the first dynasty. We are familiar enough with the plane-convex bricks of A-anni-padda and other first dynasty kings; here we have a totally different type of large flat brick which does not appear in any subsequent period: at Ur, as apparently at Kish, the flat brick precedes the introduction of the plane-convex, and its use for the tomb arches must take them well back beyond the first dynasty.

The case of Mes-kalam-dug is not isolated. The cemetery was crowded, and it is a very common thing to find one grave exactly over another, and sometimes they are three or four deep. Such superposition provides an excellent basis for relative dating, but in normal cases we have no means of knowing how long an interval separated the lower from the upper burial. But it is different where a royal grave is concerned. A king's tomb, sanctified by the wholesale slaughter of his followers, was not likely to be soon forgotten or lightly esteemed; indeed we have very strong evidence (in the case of PG. 777, one of the all-stone tombs) that the shaft was surmounted by a sort of funerary chapel. It is inconceivable that the graves of commoners should intrude on the actual shafts of the royal tombs as long as their memory persisted, yet in fact such intrusive graves do

PLATE III



SILVER MODEL OF A BOAT FROM PUL 799

PLATE IV



THE BRICK ARCH VAULT AND APSIDAL END OF THE TOMB-CHAMBER OF PG. 259



VIEW LOOKING DOWN INTO THE THREE VAULTED CHAMBERS AT PG. 275

PLATE V



THE WOODEN WHEELS OF A BULLOCK-WAGGON IN GRAVE 759



VIEW LOOKING DOWN INTO THE EXCAVATED GRAVE AREA
 (A) GRAVE OF MES-KALAM-DUG (B) TOMB PG. 376 (C) TOMB PG. 377

Prehistoric Cart-tracks in Malta

by T. ZAMMIT

ONE of the problems that students of Maltese archaeology have to face is the meaning of the numerous cart-tracks furrowing most of the barren rock-surfaces. These tracks are scarce on Gozo and non-existent on the islands of Comino and Filfolà.

They consist of pairs of parallel grooves running for long distances on the hard coralline limestone patches, now straight and now curved as if avoiding an obstacle or having to change their direction. The grooves are mostly v-shaped, usually from 10 to 20 inches wide (25-50 cms) on the surface, and about 4 inches (10 cms) at the bottom. Between the two grooves, measured at the middle part, the distance is nearly always 4 feet 6 inches (1.37m). Naturally the depth of the grooves varies with the lie of the ground; if there is a strong tilt sideways, one of the grooves is shallow whilst the other is very deep. Grooves over one foot deep are very common. The carts that run over these roads had an axle-tree about four and a half feet long and the wheels had to be very high to move freely in the grooves. The modern country carts of Malta have an axle 5 feet (1.53m) long and a diameter of 5 feet 3 inches (1.60m).

I do not think that there can be much doubt as to the kind of vehicle used on this track: they were, very probably, strong heavy carts with solid wooden wheels without a metallic tyre. It has been suggested that some kind of sledge with strong runners may have been used instead, but when one is familiar with the sharp curves frequently met with along these tracks the idea of a sledge is abandoned, as no runner could be made to glide at all under such conditions.

If no account is taken of the long time required to wear out the hard coralline limestone to the actual depth of some of the grooves, it seems hard to believe that a wooden wheel could cause such erosion, but time explains the difficult task. The grooves are triangular in section and very smooth. Of course pebbles and sand between wheel and groove would act as an abrasive and help the erosion. The grooves caused by modern wheels, fitted with iron tyres, are differently shaped

PLATE I



CART-TRACKS INTERCEPTED BY SHAFT OF PREHISTORIC ROCK-CUT TOMB AT MTARFA, MALTA



ANCIENT CART-TRACKS AT MTARFA, MALTA

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furrows are formed by the continuous pounding of the animals' hoofs, and where the rock is not very hard the path is broken, and from a ridge it becomes hollow to such an extent as to become difficult and even dangerous to use. These practical considerations lead to the conclusion that the carts destined to move over these rough paths were dragged or pushed by human power. It was team work, most probably very laborious, but surely more adequate to cope with the sudden changes of gradient, the sharp curves of the ruts, and the hundred and one obstacles encountered on the rock roughened for ages by natural agencies.

The question next arises as to how these tracks began and how it was possible for the numerous vehicles to keep on the same tracks before they had become sufficiently deep.

One may imagine the rocky ground being originally covered with soft loam on a level surface; it is easy then to believe that the first carts left a notch in the ground that could be seen by the carts that followed afterwards. In time the rut deepened, the rock was attacked, and in due course grooved deeper and deeper by the passage of the wheels. It is, however, difficult to account for the tracks on sloping ground where a soft loam was not likely to exist. Under these circumstances a cart could never follow the identical track of the one that went before it in an open country, unless helped to do so either by special posts or other guides, or by notching the first tracks. The capable and energetic people who built the megalithic monuments and who conducted the enormous traffic on the roads under discussion, certainly would not shirk the preliminary work of cutting the necessary notches to initiate roads which they required as essential for their welfare. It is evident that on the whole the cart-tracks were started by human labour, to be deepened later on by use. Definite signs of carefully laid sets of cart-tracks are seen on different sites of the island. At Minsia on the St. Julian's heights, between Sliema and Birkirkara, we have a system of shunting which cannot in any way be attributed to mere accident. (Plate IV). On this table-land one pair comes straight from a northern direction whilst another pair enters the same ground from the south. About the middle of the ground one of the pairs deviates gradually to the left and the other to the right, and after describing a curve each pair joins the main ruts on the opposite side to that from which it started. The two pairs of ruts cross each other before joining the main trunk, so that two carts moving from opposite directions are free to continue their course by shunting on to the side track.

PREHISTORIC CART-TRACKS IN MALTA

The disintegration of cliffs and their cleavage—with detachment of the parts that break off, the cutting of rock whilst quarrying stones for building purposes, and covering large tracts of rock surface with soil to make fields, caused many cart-tracks to disappear in part or altogether. This, naturally, led to great confusion in the attempt to determine the course of the tracks, and induced many people to believe that the cart-tracks existed when these islands were connected with a continent and consequently were not meant for a local traffic. Independently of the fact that these islands could not have been inhabited by an industrial population at the end of the last ice-age when the separation from the continents took place, the assertion that some of the ruts disappear on the seashore in the direction of the sea has never been proved in any way.

There is only one case where a pair of ruts appears to enter the sea and that is in the bay of St. George at Birzebugia. These cart-tracks skirt the bay and plunge into the water in a western direction, that is they follow the bend of the bay landwards, hugging the shore. They probably appear once more on the other side of the bay, now covered with silt and with field soil further to the south-west. This disappearance of the cart-tracks into the water is certainly due to the subsidence of the soil long after the tracks were formed, for a number of bell-shaped pits that once studded the shore of the bay are to be seen at the bottom of the sea. In any case, the cart-tracks are not directed towards the open sea and can never prove that they were meant to run beyond the present shores of the island.

Ruts appear in some cases to run at right angles to the cliffs to the south-west of the island. These cliffs are miles away from the seashore. They are made of the coralline limestone and, having a layer of clay under them, cleave off easily on the free side. Large loose masses of rock break away and slide down the side.

At Mtahleb, a pair of cart-tracks appear to end at the edge of such a cliff, but looking down the side at that point one can see the cart-ruts in a direction nearly parallel to the cliff on the detached mass. The tracks, therefore, were broken just at the point when they were changing their direction, that is when about to follow the bend of the cliff. Other cart-ruts in the same locality move in a line with the cliff for a considerable distance.

If some imaginative persons have believed that the cart-ruts were in use in palaeolithic ages, others went to the other extreme and attributed them to the historical period of the Roman occupation of

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these islands and even to a later time. Although it is very difficult to assign a date to these signs of human activity, there are some positive data which help us to affirm that the cart-tracks existed long before the Roman occupation of these islands, that is before 200 B.C.

Every student of our local archaeology is aware that from time immemorial, the natives of these islands used to bury their dead in rock-cut tombs. Most of these tombs resemble the well known Sydonian tombs of Phoenicia proper, which may be taken to have come in use during the Phoenician occupation. These rock-cut tombs consist of a shaft, the depth of which varies considerably, and a funeral chamber at the bottom cut in one of the sides of the shaft.

On the Mtarfa plateau to the west of the Military Hospital there are numerous rock-tombs of this description in a good state of preservation. Not far from the main road leading to the hospital, the shaft of one of these rock-tombs is found to have been dug out across a very fine pair of cart-tracks (plate I), a clear indication that when the rock-tomb was cut the cart-tracks were no longer in use and therefore cut much earlier than the tomb itself. Similar cases are to be met with in the Falka district on the way to Sebbieh, at Benjemma, and on other open spaces.

From the foregoing considerations it is certain that the cart-tracks were intended for local purposes and are the signs of great activity of the native population extending for long periods of time. What remains to be found out is the approximate date when such considerable activity showed itself, and what was the material transported so persistently along these primitive roads. Superficial observers have often stated that in view of the existence of numerous megalithic buildings in the islands the neolithic people required these roads to cart the large blocks of stone from the quarries to the site of the proposed monuments. This would be a plausible argument had cart-tracks been found close to the megalithic buildings, but unfortunately these primitive tracks are never found in their vicinity. They occur only on the flat top of hilly districts, or deeply furrowing the sides of the hills from the valleys and ravines at their feet to the highest table-land.

The carting of stones, large or small, is out of the question, as stone is found everywhere and when required for ordinary use could be cut on the spot. It is evident that the material transported was abundant at particular places and badly lacking in others where its value was far greater than the labour required to get it there. By

PREHISTORIC CART-TRACKS IN MALTA

elimination the only precious material to the primitive man was the field soil, capable of growing his food and making his life possible in a barren land such as we have reason to believe Malta was in the neolithic period.

Walking across the country, one is struck at once by the number of terraced fields along scarped, ragged hills, ensconced in odd corners, and stretching on the table-lands on which soil could not form and collect by natural means. A little thought brings a clear conviction that the terracing on the slopes of the hills is not the result of natural agencies. Even if soil formed in fissures, nooks, and corners of crumbling hill-sides, it would have a downward movement in the course of ages. Wind and rain would, in a comparatively short time, move the sandy soil and wash it as far down as it would go.

When the energetic neolithic population cast their lot on these islands they could not, in the course of time, be satisfied with the tilling of the soil collected in the valleys and the ravines; when the population increased, the food supply had to be augmented as a scanty soil cannot support a growing population.

Nobody can doubt the enormous activity of a people who covered the island with megalithic monuments, and as this people had to live at the same time that it quarried stones and erected buildings, part of their energy was surely employed to increase the number of fields and their area. The fields in the valley could not satisfy their increasing numbers and they had to aim higher, and try to carry up some of the surplus soil stored for centuries in the ravines, and by their united effort reclaim the wild land. Here was therefore work of the greatest magnitude to occupy thousands of people for ages. The sloping hills did not deter them from their task, carts were devised and constructed, and the precious soil found its way higher and higher on the barren hills. This huge work of a large and peaceful society has never been adequately appreciated, although it must have been greater than the result apparent to us. Walking along the high table-lands in Malta, one is at once struck by the existence of extensive rubble walls, high and very well constructed, that once enclosed fertile soil but now stand abandoned with nothing beyond them but barren rock. Nobody would dream of building high walls to enclose an empty space, yet such walls are abundant on the extensive rocky surface to the south of Boschetto, towards the Tal Ghalia plateau, at Benjemma, and practically on every top of a hilly ground.

Far more fields existed in neolithic days than those in use at

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present, but in the course of centuries those which for some reasons were not properly attended to were slowly but surely washed away by rain and deposited once more in the valleys from which they had been removed.

The farmers on these high lands had not only to provide the soil but, with incessant toil, had to keep the red earth where it was spread with infinite labour. Yet the great effort of the neolithic population is hardly recognized by their offspring who are apt, now and then, to admire their megalithic monuments, but give no thought to the greater performance of turning the rocky hills into arable land.

Mr Sidney Freeman suggests that another very precious element might have been carted along the furrowed slopes, and that is water. Malta has always been a dry country and the few springs that gush out of the rocks are only found on low ground, certainly below the lower coralline limestone. In the absence of tanks, water had, certainly, to be carried up from the valleys below and this must have been another necessary but arduous task of the neolithic farmer.

It was also essential that water should be carried to the shores of the harbours which had no springs in the vicinity. Ships must have called often at Malta, judging by foreign stones such as flint, obsidian, and lava, which are not to be found locally, and yet freely met with in all Neolithic and Bronze Age stations. The cart-tracks seen on the shore of St. George at Birzebbugia may have been detailed for the water service, for near that harbour no water is to be found except what was probably stored in the 35 pits cut along the shore, close to the sea.

This is the tale revealed by the modest cart-tracks that are seen to wind their way from valleys and ravines up the craggy slopes of hills.

I have often watched the deep winding grooves that, from the Kligha valley, reach by slow degrees and devious ways the first slopes of the Kallilia hill, to the north of the Mtarfa heights; as soon as the cart-tracks are firmly established on the hard rocky ground they proceed straight up to attain the first heights of the Benjemma hills, the Nadur ridge. At this point other cart-tracks may be seen to reach the table-land from the south-east and the south-west. Along these paths millions of cart-loads of earth found their way, ready to fertilize those barren rocks which in many points are again being denuded by natural agencies.

Seen in this light the huge buildings of Hajar-Kim, Mnajdra

PLATE II

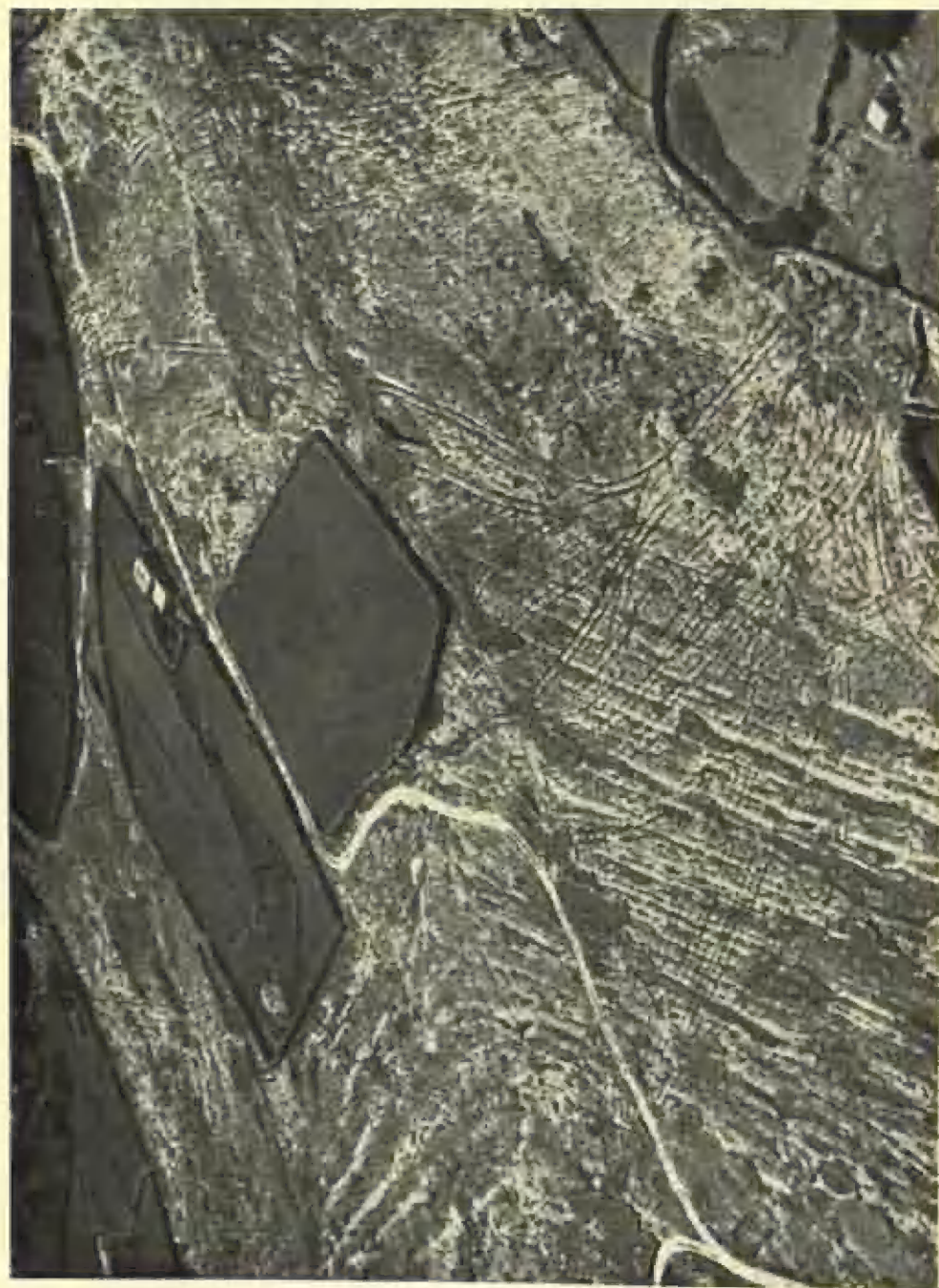


MODERN CART-TRACKS, MALTA



ANCIENT CART-TRACKS, MALTA

PLATE III



CART-TRACKS, MALTA: SEEN FROM THE AIR

PLATE IV



CART-TRACKS AT MINSLA, ON THE ST. JULIAN HEIGHTS, MALTA

PLATE V



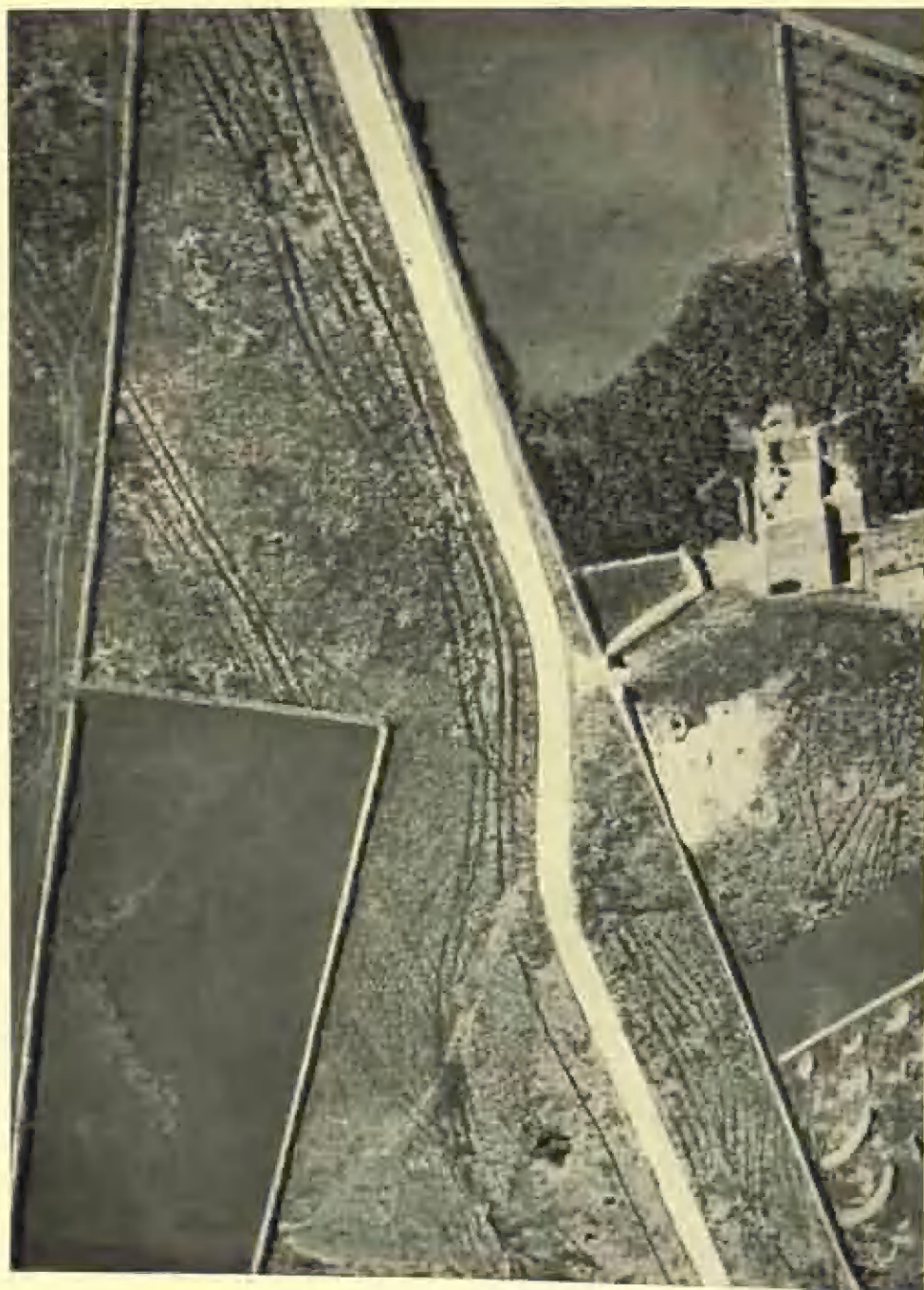
CART-TRACKS, MALTA / SEEN FROM THE AIR

PLATE VI



CART-TRACKS, MALTA : SEEN FROM THE AIR

PLATE VII



CART-TRACKS, MALTA : SEEN FROM THE AIR
Plates iii-vii reproduced by permission of the Air Council

PREHISTORIC CART-TRACKS IN MALTA

and Tarxien must pale before the fertile terraces of Benjemma, Naxxar, Wardia, Dweira, Mgar, splendid monuments of the will and the energy of a people who, determined to make the most of the rocky land on which Providence had cast them, with the most primitive tools covered the land with fertile soil, and raised the finest buildings of their type in existence to the Divinity that helped them in their difficult enterprise.

Forerunners of the Romans

by D. RANDALL-MACIVER

THE standard Roman histories, especially when written by authors who have an undisguised contempt for archaeology, give very little idea of the civilization and development of Italy before the later days of the Republic. They are histories of Rome but not of Italy. And so the reader is subconsciously led to suppose that the Romans were the most important and the most advanced people on the peninsula, who gradually extended the benefits of their superior civilization over a series of more or less barbarous neighbours. This is a complete inversion of the real facts. The Romans of the Republic were a rather backward people, and it was hardly before the second century B.C. that they could begin to rank as the equals of the Italian provincials in general refinement and culture. Incessantly occupied with the wars which were essential to their very existence, the Romans had no leisure, even if they possessed the inclination, to cultivate the arts and humanities. But, while the future head of the world was struggling for bare life, a rich Italian civilization had been born and developed in the independent territories which had not yet fallen under her sway. Before ever they came under the organizing and levelling domination of the central capital, Etruria, Venetia, Lombardy and Picenum had each evolved its own distinct and very valuable local culture; while the whole south from Naples to Brindisi had been civilized by Corinthian and Ionic influence. Rome when she conquered and annexed these territories in due sequence fell heir to a fully finished product. Italy had been created, but not by Rome; the task that fell to the Romans was much more suited to their peculiar abilities—they had to organize and administer the country. But it was a country already fully reclaimed from the wild, inhabited not by barbarous aborigines but by a group of peoples most of whom had arrived at a very high grade of civilization, which fully qualified them to educate their political masters. Agriculture was practised on a large scale; wealthy and important cities had existed for centuries; an extensive foreign commerce had long been conducted both by land and sea, not only

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with the Mediterranean but with distant parts of continental Europe. The houses of Etruscans and Venetians, Capuans, and Cumaeans were full of objects of art and luxury unknown to the fellow citizens of Cato. It may be of interest therefore briefly to review the stages by which the making of Italy as distinct from that of the Roman state was achieved, and to consider who were the principal peoples that contributed towards it, as well as to enquire whence they derived their origin and their culture.

It is necessary to begin at a very early date because the permanent background of the Italian population was laid down several thousand years before Christ. We may indeed omit as of very slight importance the poor savages who picked up a precarious living in the immeasurably distant ages of elephant and cave-bear. These formed only a very tiny proportion of the eventual population, and had no effect whatever on its progress and development.

It is their successors in the late Stone Age who must really be considered for all practical purposes as the Aborigines. These neolithic men however were not merely the forerunners, they were literally the ancestors of far more than half the Italians of Roman days, and even of our own time. Their origin is unquestioned; they belonged to a large race-family which became gradually differentiated in quaternary times in some parts of Africa north of the tropical belt, whence they spread all round the edges of the Mediterranean. The Italian branches of this well-named 'Mediterranean Race' migrated several thousand years before Christ, and the majority made their way by the Straits of Gibraltar, first into Spain and then on by the Riviera to north and central Italy. Their path can be traced by the products of their settlements, which are so precisely similar along the whole route as to make it certain they were the work of a single race. It is usual to call this people the Ibero-Ligurians, which is a useful name as it recalls their ethnic origin and affinities.

The Neolithic race which entered the country at this very remote period has remained undisturbed in many regions down to the present day, and has always constituted a numerical majority of the whole Italian population. It may be remarked in passing that it was one of the three elements which combined to form the Roman people, and was probably the most durable of the three. On the east of the Apennines the descendants of the Neolithic men resisted all attempts at invasion during the Bronze and early Iron Ages; and under the Roman domination continued to occupy half the Adriatic coast as well

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as a large part of the mountainous interior. Their most powerful and important representatives are the Picenes and Sabines of the historians.

In north Italy and on the west of the Apennines the Ibero-Ligurians were subdued, as will be seen, by invaders of wholly different origin, but though dominated and overshadowed they always remained a far from negligible element. South of Naples, on both sides of the peninsula, this same Mediterranean race has always been not only the principal but almost the only factor in the population. It is thought to have come in originally by a separate process of migration from that which colonized the northern half of Italy. The Neolithic men of the south are undoubtedly of the same origin as the Ibero-Ligurians, but as their civilization shows many minor points of difference it is well to call them by a separate name. They may be termed Siculans, inasmuch as they penetrated to their eventual homes by way of Sicily, and were reinforced from time to time by overflows from that island. But the exploration of southern Italy is still so imperfect and incomplete that theorizing is dangerous. Accordingly in the remainder of this essay I shall scarcely speak of the south, but shall confine myself almost entirely to the well-studied regions of the north and centre.

The second great moment in the prehistory of Italy is when bronze and copper begin to affect the life and industries of the inhabitants. This moment synchronizes with the first waves of that transalpine immigration which eventually modified the constituent elements of the whole north and a great part of the west, but left the east and south untouched.

We may select the year 2000 B.C. as a point which very nearly corresponds to the date when these changes first began. This is chronologically exactly as many years before Julius Caesar as the beginning of the twentieth century A.D. is after him.

By 2000 B.C. not only Italy but the whole of central and western Europe had left savagery far behind and, though immeasurably inferior to Egypt, Crete, Asia Minor and Mesopotamia in the scale of civilization, had arrived at a method of life which seems quite rational and intelligible to the modern mind. In the several thousand years during which they had occupied lands cast in practically the same geographic and climatic forms that they bear today, the Neolithic peoples had made immense strides in development. The general aspect of their life is very similar in whatever part of Europe it may be studied. They were living in settled communities which presuppose

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a high social organization. Nomadism had been abandoned, the hunting-man of the old Stone Age had either vanished or been converted to new ways. Agriculture, the farming of stock, and the exercise of simple industries like pottery-making and weaving, produce the impression of an existence which may be called primitive but is by no means uncivilized. Only the dearth of raw materials, and particularly of metals, seems to condemn western Europe to stagnation while the eastern Mediterranean is experiencing its first phases of development.

But already several centuries before 2000 B.C. inroads had been made upon the isolation of Europe, which, as they became more frequent, led to a transformation of all European life. These were due to the explorations of prospectors from Anatolia, Crete and the Levant, searching for the metals which they had long used but required in larger quantities than their own countries could furnish. Their quest led first of all to the opening up of the copper supplies in Spain, and the discovery of the mineral wealth of Hungary and Bohemia. The effect on Italy however was only indirect, for there is no evidence that the mineral wealth of Tuscany was divined till much later. As early as about 2400 B.C. there are indeed several instances of the occurrence in Italy of bronze daggers identical in type with daggers found in Spain, Cyprus and Crete. These may have been brought in by sea-commerce, but the transition from the Neolithic to the Bronze Age in Italy was not effected by such sporadic communications. It was due in the main to an immigration from the north, which constitutes the second great step in the formation of the population.

The first stage of this immigration is revealed by the appearance of an entirely new people, overflowing apparently from the highlands of Switzerland. Like the Swiss lake-dwellers they made their settlements in villages built upon piles in shallow waters for purposes of defence. Gradually they extended their occupation over the whole chain of the Italian lakes from Maggiore to Garda, and even as far as the swampy regions about the Euganean hills in Venetia. No skeletal remains of them have been found, but from their character and place of origin it seems a probable inference that the lake-dwellers belonged to the type of *Homo Alpinus*, a short dark round-headed man absolutely contrasting in his physical characteristics with the Mediterranean race.

These Alpines were not sufficiently numerous to affect the population except only in Lombardy and Venetia, but their appearance in itself makes a landmark. It is the first instance of that influx of alien

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northern peoples which becomes a regular process in the history of Italy, repeating itself at short intervals throughout the next four thousand years. Their arrival synchronized with a great change in external life, whether or not it actually caused the change as some writers maintain.

Hitherto the Ibero-Ligurians had possessed no better material for their tools and weapons than flint or other stones, often most dexterously fashioned but necessarily limited in usefulness. Now however in the lake-dwellings we discover numerous weapons and implements of cast bronze. They could not have been manufactured in Switzerland, which did not possess the metal ; so it is evident that they must have been derived, directly or indirectly, either from Spain by way of the Riviera, or else from Hungary and Bohemia. The types indicate that the latter was the principal source. There was already a flourishing metal industry on the Danube, and great commercial routes had been opened up all over central Europe. An indication of some slight connexion with these is furnished by the finding of Baltic amber as well as of glass paste in the lake-dwellings ; but the very fact that such objects are so rare proves that Italy had not yet been brought into the full current of European commerce. This great step was not achieved until the next stage of transalpine immigration. The lake-dwellings begin in the Chalcolithic period, the moment of transition from the Stone Age to the Metal Age. Some of them persist as late as 1000 B.C., after which they entirely disappear and it is an unsolved problem what became of the inhabitants. The most probable view is that they became less amphibian in the process of time, and were gradually absorbed by the surrounding Ibero-Ligurians.

The second stage of immigration from beyond the Alps brings in a people of far more importance than the lake-dwellers ; who were perhaps more of a curiosity than a definite link in the chain of the country's progress. The new movement is from the north-east, coming directly from the Danube region, the home of the most advanced European culture of that time. It synchronizes with the full Bronze Age of central Europe, and brings Italy immediately into touch with all the commercial and industrial life that is beginning to develop there. The missionaries of this new civilization are the builders of the Terremare in the Po valley.

The word Terramara is an untranslatable piece of jargon, of which the derivatives are very difficult to manipulate in any language except Italian. It has been universally accepted as the technical term for a

PLATE I



ITALY : TRANSITION FROM STONE TO METAL
 STONE DAGGERS AND THE EARLIEST SHAPES OF BRONZE WEAPONS
Selected from Montelius, 'La Civilisation primitive en Italie'

PLATE II



ITALY: THE FULL BRONZE AGE
WEAPONS FROM HOARDS AND TERRAMARE
Selected from Montelius, 'La Civilisation primitive en Italie'

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pile-dwelling on dry land, in a style unknown outside Italy though it has certain general analogies on the Danube. As being semi-lake-dwellers the builders of the Terremare might be considered to belong to the same family as the real lake-dwellers, but if so it was at least a distinct branch, and we cannot safely hazard any guess as to their racial characteristics beyond saying that they were quite different from those of the Mediterranean race. Their settlements occupied the whole valley of the Po on both sides of the river, covering therefore a great part of the eastern area previously colonized by the lake-dwellers. Without necessarily subscribing to the popular theory that the people of the Terremare were the direct ancestors of the Latins, I find it so necessary to have a manageable title for them that I shall henceforward refer to them here as the proto-Italici.

They were a people of very strongly marked characteristics; differing in many respects from the Ibero-Ligurians, but most of all in their burial practice. Whereas the aborigines always retained the custom of burying their dead in the ground, the proto-Italici cremated and deposited the ashes in large jars. Entire cemeteries of these cremation-urns have been found outside their villages, built precisely like the villages themselves on piles, which raised them some distance above the swampy ground. This contrast of burial rites serves to distinguish the main currents of Italian population even as late as the middle Iron Age. For the Ibero-Ligurians all over the peninsula maintained the practice of inhumation, whereas all the northern invaders of whatever period belonged to cremating races.

The pile-built dwellings of the proto-Italici have been so often described that they are well known. Only I feel obliged to register a note of warning against the theory that they were laid out on the same plan as Roman cities. Sergi's very telling criticisms on this point have never been satisfactorily answered; and the argument that this system of planning is specifically Latin must in any case collapse if it can be shown that the Romans themselves learned it from the Etruscans.

The importance of the proto-Italici rests on two distinct grounds. In the first place they were highly skilled both in metallurgy and in agriculture, so that their arrival must have had the effect of raising the whole material status of the country. And in the second place they evidently kept up a close connexion with their original home, situated in a densely populated and flourishing region which contained the most thriving industrial centres of the day. Thereby they made Italy the

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terminus of branch lines connecting with the great trunk routes of commerce over Europe. It is no anachronism or exaggeration to use these terms in speaking of the Bronze Age. One of the most valuable results of comparative archaeology in the last few years has been the demonstration that, from very early times, a widespread system of commercial intercourse existed all over the continent, from the Black Sea to the Atlantic and from the Baltic to the Mediterranean. The second millennium B.C. was the period of the opening up and exploration of Europe, comparable to the opening up of India and China by the western nations after the 15th century A.D. Metals and materials were the objects of search, and wherever they were discovered it was likely that centres of industry would spring up. Thus in particular the copper of Hungary and the tin of Bohemia had created a populous and flourishing series of stations along the Danube, which became the principal source of the Bronze Age culture of Europe. The proto-Italic formed the liaison between the Danube and Italy, which is the explanation of the whole development of the Bronze Age in the latter country.

For it must be plainly understood that the Bronze Age culture of Italy is in no sense dependent upon the Mycenaean, nor directly derived from it. The analogy of Sicily must not mislead us. Sicily was unquestionably in touch with the Mycenaean world. Mycenaean vases and weapons are found in Sicilian graves and the influence of Aegean culture is unmistakable. But the more we study Sicily the more evident it becomes that the whole development of Sicilian civilization is absolutely independent of Italy. Curiously enough the Straits of Messina form a positive dividing line. Right down into the full Iron Age there is a complete absence of any interpenetration or intercourse between Sicily and Italy. In view of our very slight knowledge of southern Italy in the Bronze Age it might be rash to exclude all possibility that Sicily may have influenced Calabria and Apulia in some slight degree; but it is certain that no such influence penetrated into northern or central Italy; the civilization of the north and centre at least is purely continental. With a vivid memory of all the loose statements that have been made upon this subject I feel it necessary to point out the incontrovertible fact that except for a quite doubtful case on Gargano not so much as a sherd of Mycenaean pottery has ever been found between the Alps and the Gulf of Taranto. And, if the bronze weapons and implements are critically examined, it will be found that very few resemble the Mycenaean, and these few are

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generally remote derivations modified by passage through Danubian manufactories. Any part of its Bronze Age culture which Italy did not derive from the Danube may be ascribed to intercourse with Spain, which was carried on by way of the Riviera, as is proved by the rock-drawings of Liguria.

A certain amount of maritime trade with Sardinia is also to be inferred, but it was not important enough to have any far-reaching consequences. Occasional objects of Aegean or Trojan origin, such as spiral-headed bronze pins, must have travelled by way of the Danube; as it is evident that there were no direct communications with Greece by sea. A few examples of amber, which could only have come from distant Jutland, show that the proto-Italici derived some little advantage from the thriving trade between the Baltic and the Danube. But the rarity of amber on Italian sites before the Iron Age suggests that the Terremare were a little off the main amber route, which can hardly have been deflected over the Brenner quite so early as this.

There is no doubt that the proto-Italici were excellent bronze workers, who not only imported but also manufactured many weapons and implements. The actual moulds for casting some of these have been discovered in their settlements. Certain forms of bronze daggers are recognized as specifically Italian, and these have been found on Bohemian sites of 1600 or 1500 B.C. Indeed some entire Bohemian deposits of this date are so precisely like the Italian that it is difficult to say which owed most to the other. The bronze swords of the Terremare, which are quite different from all the Aegean types, may either have been imported or manufactured locally—it is impossible as yet to decide; but there is ample evidence that the proto-Italici were producers as well as importers.

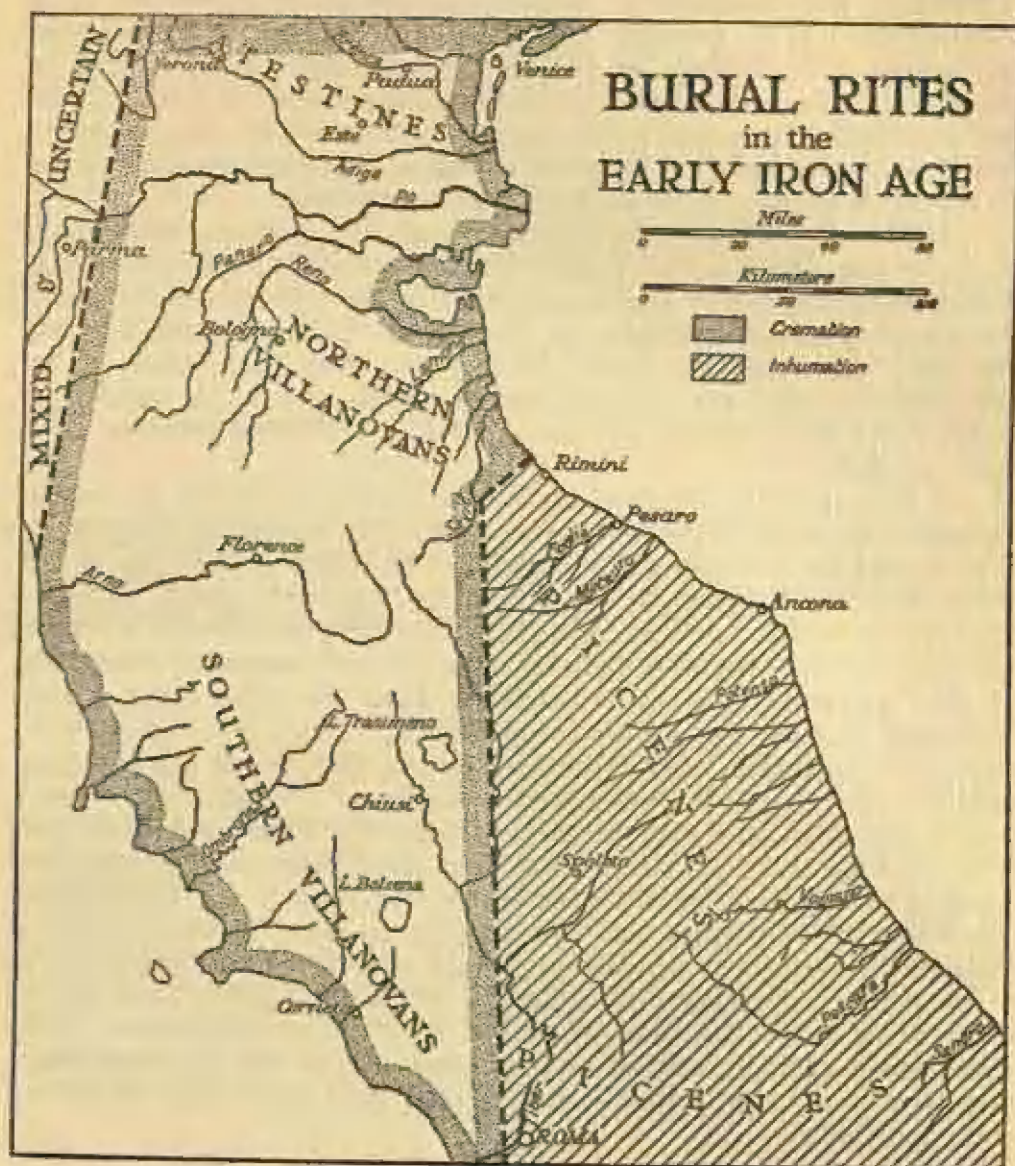
By about 1500 or 1400 B.C., then, the manufacturing ability of this people, coupled with their extensive commercial relations, had produced a uniform level of material culture over the whole of Italy. There is little or no difference between the bronze weapons and implements of the Terremare and those of Emilia, the Marche and Venetia. In Latium, Tuscany and Umbria few Bronze Age sites have been excavated, but such as they are the products closely resemble those of the north. Even in southern Italy, though this lies outside the range of my review, Terramara types of daggers and sickles have been found. Sicily on the other hand is wholly distinct, working out its own separate evolution with a considerable amount of help and suggestion from Mycenaean sources.

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At the close of the Bronze Age then, which may be placed about the 13th century B.C., Italy had become a partner sharing in most of the benefits of European commerce. She had also made a distinct position for herself as an independent manufacturing country, if only on a small scale. The next chapters in the evolution of the country deal with the development of its internal resources, the discovery and exploitation of its mineral wealth and the consequent movements and migrations of the population. These are the chapters which belong chronologically to the centuries 1000 B.C. to 400 B.C. I shall treat these in full detail in my succeeding article, but it will be useful to prepare the way by a statement of the different views as to the origin of the Iron Age peoples and the causes of their distribution.

Between the end of the Bronze Age and the beginning of the numerous Iron Age cemeteries all over northern and central Italy there is an unfortunate gap, which leaves the solution of some capital problems still uncertain. For a period of about two centuries the archaeological evidence is extremely slight; and the attempts to bridge the gap by prophetic hypothesis, though attractive, are not wholly convincing. If we pick up the thread again about 1000 B.C., when a considerable amount of comparative evidence is available, the map of Italy may be shown divided into distinct homogeneous compartments on the basis of burial custom. The map here reproduced demonstrates that west and north of a line drawn from Rimini to Rome the entire country is given up to the practice of cremation. A very small proportion of earth-burials may still be found scattered through this region, doubtless due to the continued presence of some of the original Ibero-Ligurians. East of this line cremation is practically unknown; the sole rite is inhumation. The interpretation of this is that on the east of the line the original Neolithic population, which may be called the 'Picene' from the name of the tribe best known to history, has always remained unchanged; while west of the line the same original population has been swamped by cremating immigrants who have come in between 1300 and 1000 B.C. The date of 1000 B.C. is a convenient point to take for consideration, as it eliminates the disturbing element of the Etruscans, who did not arrive till the end of the ninth century.

Now the question is, Who are these cremating peoples and where did they come from? The Italian archaeologists have a ready and very plausible answer. According to Pigorini, who has been followed and supported by most of his ablest contemporaries, they are simply

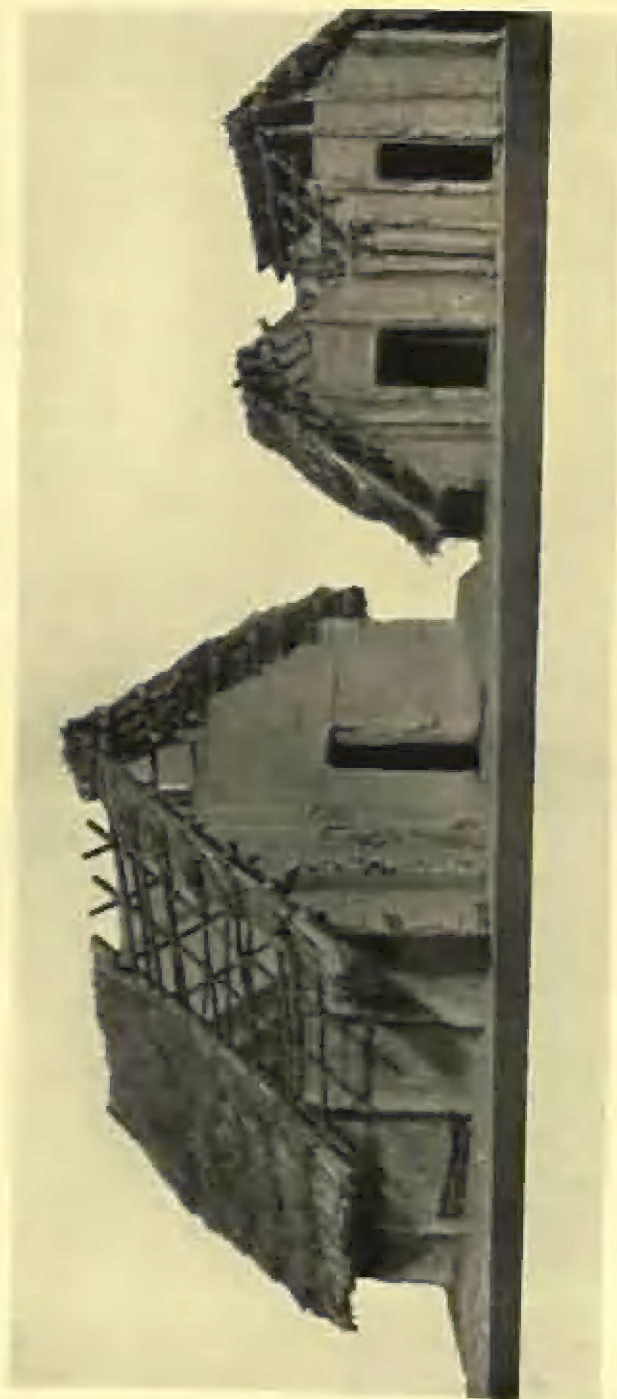


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the proto-Italici. These are supposed to have abandoned their Terremare for unexplained reasons, and to have proceeded on a conquering march through the Bolognese country and over the Apennines into Etruria and Latium. They would have reached as far as the Alban hills, settled on the Palatine and buried their dead in the most ancient cemetery of the Forum. On this view they would be the direct ancestors of the Romans, as well as the most important factor in the whole population of northern and central Italy.

It is a very attractive theory, and there is no serious objection to it except one, which is that it lacks sufficient evidence to be convincing. There is no such close connexion between the products of the early Iron Age centuries and those of the Terremare as to make it at all necessary that the one should be derived from the other. The intermediate steps are lacking, and we must await the results of more exploration before it can be possible to decide whether they exist or not.

I have recently proposed an alternative theory, which is equally incapable of proof at the present moment, but has certain advantages and should be carefully weighed beside the other in the light of all fresh evidence that may be brought to light in future years. This is that the cremating races are not direct descendants of the Terremare people; but are related to them by some sort of cousinship, inasmuch as they unquestionably come originally from the same country and belong to the same general type of civilization. I suggest that, as they exhibit considerable local differences in one part of the country and another, they should be considered as three or four separate nations; which probably came over the eastern Alps in several distinct waves, between 1200 and 1000 B.C. From their distribution a little after the opening of the Iron Age I should enumerate them as the Comacines, the Villanovans—divided into two branches as northern and southern Villanovans,—and the Atestines. I have chosen conventional names of geographic derivation in order to avoid the endless and futile controversy as to the right allocation of tribal nomenclature. The distribution of these several nations is shown on the accompanying map, and in my next article I shall discuss their respective characters and importance.



MODEL OF LOG-CABIN HOUSE AND TWO HUTS AT HIXIL, NEAR BERLIN
(reconstruction by Dr A. Kuhnhausen)

The Lausitz Culture

by V. GORDON CHILDE

ON the continent as in Britain the later phases of the Bronze Age are marked by the spread of large cremation cemeteries generally termed urnfields. One of the several groups of urnfield cultures in Central Europe occupies such a pre-eminent position that it may even claim to be the parent of all the rest. It is known as the Lausitz or Lusatian culture after the area where it is most richly and typically represented—a strip in eastern Saxony and western Silesia.

Here the bodies were cremated in *ustrina* close to the cemetery, and the ashes, carefully purified from cinders, were enclosed in clay ossuaries or cinerary urns. The ossuary was closed with an inverted dish, but in all early burials a hole was carefully bored in its walls. It is supposed that this aperture was intended to allow the ghost to escape, and hence it has been called a ghost-hole (*Seelenloch*). The urn, with its cover, was buried in the ground with many accessory vases, presumably containing provisions for the journey into the next world. A barrow might be raised over the tomb, but in all cases the graves form regular cemeteries.

The distinctive mark of the Lausitz culture everywhere is the bi-conical ossuary (fig. 1, 1013) but the accessory vases enable us to distinguish two successive phases in its evolution. In the earlier the pots are ornamented with large conical warts or *Buckeln*; in the later the warts disappear to make room for flutings or corrugations generally oblique but sometimes grouped in concentric semicircles. The older ware too is generally reddish while the later tends to be dark-faced.¹

¹ H. Seger, 'Lausitzer-Kultur' in Ebert's *Reallexikon*; cf. also Červinka 'Böhmen und Mähren' *ibid*; Buchtela in *Jahrbuch der k.k. Zentral-Kommission*, Vienna, 1904 and *Mannus*, xix, (1927) pp. 26ff.

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The makers of this pottery must have lived in regular communities; the size of the cemeteries implies as much. At Buch, near Berlin, Dr Kiekebusch² discovered one such village. It consisted of wooden huts built of rough-hewn tree-trunks on the very same principle as the American log-cabin. (See plate).

The Lausitz folk were primarily farmers, for sickles and querns are found in the settlements and cemeteries. They possessed tame horses which they controlled by bits of which only the horn cheek pieces survive. But they were also metallurgists, since moulds are found even in the graves. Perhaps they invented the socketed celt. The nearest approach to a transitional form comes from Silesia; for, assuming with Sophus Müller that the socketed celt was developed out

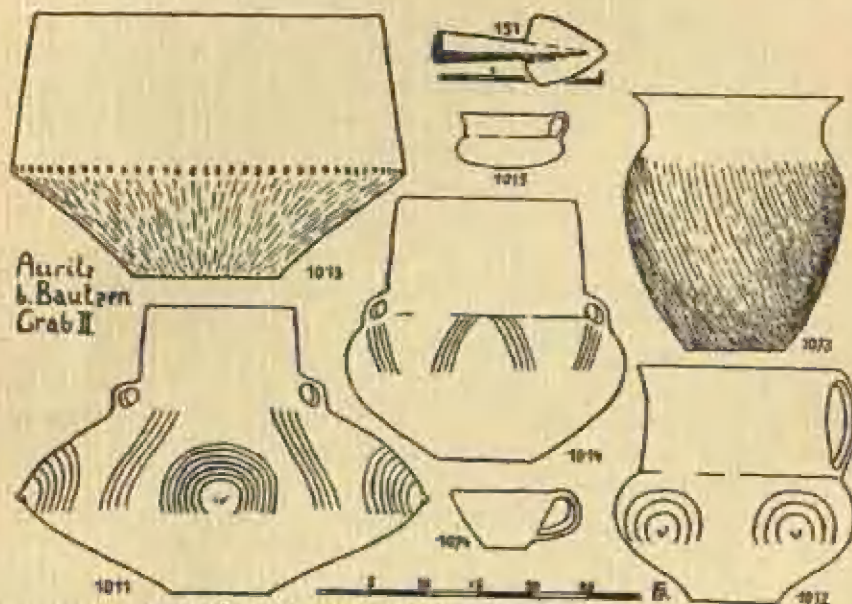


FIG. 1. VASES AND ARROW-HEAD FROM A LAUSITZ GRAVE (END OF PHASE A) NEAR BAUTZEN
(by permission of Dr W. Frenzel)

of a flanged celt held in place by a bronze sleeve that eventually came to be cast in one piece with the celt, the axe-head of fig. 2 approximates to the stage preceding the final disappearance of the saeptum. In any case it was the Lausitz folk who first diffused the use of the socketed

² A. Kiekebusch, *Die bronzzeitliches Dorf Buch bei Berlin*.

THE LAUSITZ CULTURE

celt throughout Central Europe. They seem to have been normally peaceable and democratic, but used bows and arrows, spears and bronze cut-and-thrust swords.

Economically and culturally the Lausitz people were the heirs of the Aunjetitz folk who had occupied the valleys and dominated the trade-routes of east Central Europe in the early Bronze Age. A whole series of intermediate forms connects the late Aunjetitz and early Lausitz pottery. Indeed the Lusatian cremators must have been the lineal descendants of the earlier inhumators.³ At the moment it is uncertain whether the transition took place simultaneously all over the eastern part of the Aunjetitz province—Silesia, Moravia and Lower Austria. More probably the specific Lausitz culture arose first in the Lausitz and Silesia and was spread thence, perhaps by conquerors, to the remaining regions. It is certain that early graves with wart ornamented pottery are commonest in Lausitz and the immediately adjoining tracts of Bohemia, Silesia and Poland. But such are not altogether wanting in Moravia and Lower Austria. Then in the next phase the Lausitz culture spread westward into Thuringia and northwards to the Spree; the whole of Moravia is covered with urnfields and there and in Lower Austria they contain two-membered fibulae such as were at home in central Germany. Even as far as central Slovakia pure Lausitz cemeteries occur, and north Hungary was overrun by invaders who introduced socketed celts to replace the superior shaft-hole axes previously used and fluted pottery of late Lausitz form. Even in Macedonia⁴ a similar pottery appears about 1100 B.C. in the late Mycenaean village of Vardaroftsa in a layer of ashes testifying to a hostile invasion. Reminiscences of Lausitz are even traceable in the proto-geometric pottery of north Greece where painted semi-circles reproduce the fluted semi-circles of Silesia. Evidently the Lausitz folk have advanced from their little corner in the north to colonize all east Central Europe and even make raids on the Aegean! Obviously too they have taken care to lay hands on the copper deposits of central Slovakia for the benefit of their industry.

East of the Elbe and north of the Ipoly the Lausitz peasants remained the basis of the population throughout the Iron Age; elements

³ von Richthofen in *Mannus*, Ergänzungsbande iv, pp. 140 ff.

⁴ Heurtley, *Antiquaries Journal*, 1927, pp. 44-59.

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of Hallstatt culture reached them first by peaceful penetration and then in the train of equestrian raiders from Illyria who inhumed their dead.

There are also traces of a Lausitz expansion westward, but here the record is much tangled. The hill country of western Bohemia, Bavaria and Wurtemberg⁵ was already occupied by virile pastoral tribes interring their dead under barrows. Beside these appear urnfields in the late Bronze Age, clustered principally in the lowlands but extending into the Tyrol and Switzerland. These urnfield folk, like the Lusatians, were traders and farmers, controlling the horse with horn-ended bits and living in log cabins. And they too were interested in deposits of metal, indeed they were apparently the first to mine copper and salt in the eastern Alps.

In some of the western cemeteries, notably near Munich and round Innsbruck,⁶ the biconical Lausitz ossuary occurs, but it is by no means characteristic; the north Alpine urnfield pottery is on the whole different from that in use east of the Elbe, as are the swords, pins and razors; the socketed celt is rare; the graves have a more martial aspect and are far more richly furnished with metal gifts than those of Silesia or Moravia. We are not here dealing with a mere extension of the Lausitz culture as there. None the less, whatever other elements were blended in this complex, they may well have been crystallized around nuclei of Lausitz antecedents. That group perhaps supplied leaders who could unite scattered bands and direct their varied industrial activities.

Now it was the north Alpine urnfield folk who synoicized the little hamlets strung out along the shores of the Alpine lakes into the flourishing industrial villages of the so-called 'bel âge du bronze'. Descendants of the same group must have eventually brought to England the bronze types and horn bits represented at Heathery Burn cave and in other deposits⁷. Another branch of the same stock descended the Rhine to Holland⁸ whence some at least reached Yorkshire⁹.

⁵ Naue, *Die Bronzezeit in Oberbayern*; Kraft, *Die Kultur der Bronzezeit in Süddeutschland*.

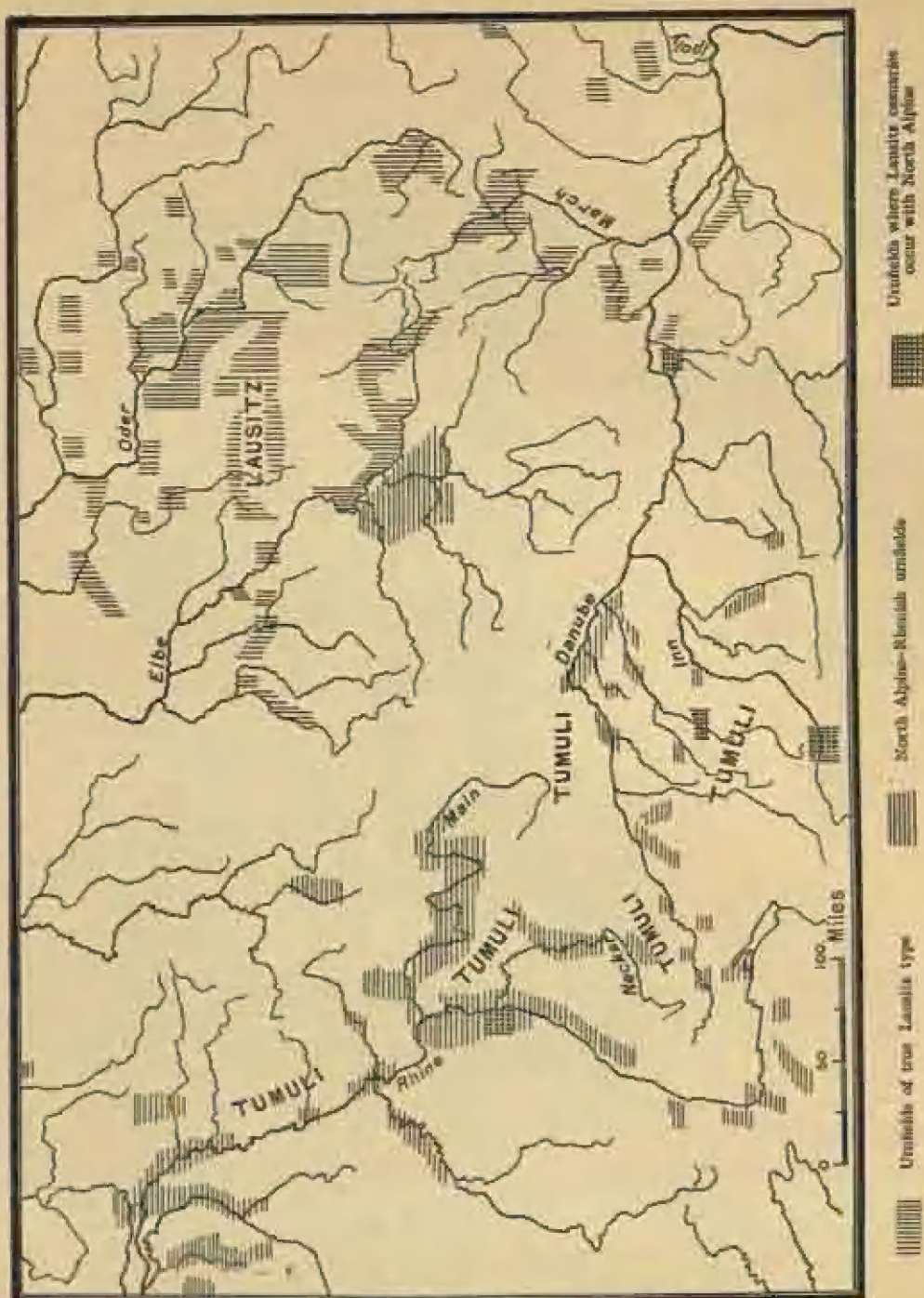
⁶ *Reallexikon*, sv Hötting.

⁷ Crawford, *Antiquaries Journal*, 1922, pp. 27 ff.

⁸ Mannus, *Ergänzungsband* v, pp. 50 ff.

⁹ Scarborough. But here there is clearly a cross-current from Central Germany as Kendrick (*Druids*, p. 39) points out.

MAP OF URNFIELD CULTURES



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Most authors hold today that the Lausitz folk belonged to the Illyrian stock who have left place-names like Hallstatt, Halle and Halicz (in Galicia) containing the Illyrian root **hal* = salt. The present writer believes, however, that these names were left by the equestrian inhumators who diffused the later (eighth century B.C.) Hallstatt culture. But whatever racial name should be attached to the Lausitz folk it is certain that they played an important role in prehistoric Europe at the end of the second millennium B.C. The diffusion of the socketed celt was not the least of their achievements.

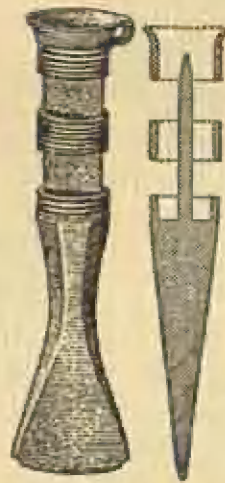


FIG. 2. CELT FROM RATEBOR, SILESIA
(after *Altachmann*, I, 1922)

Prehistoric Fortifications in Bavaria

by FRIEDRICH WAGNER

(Translated by J. H. S. MOORE and the EDITOR)

BAVARIA is a country that is very rich in prehistoric fortifications. In our early histories the construction of these is attributed almost without exception to the Romans ; it is only the more intensive study of genuine Roman work that has enabled us to distinguish between pre-Roman, Roman and post-Roman remains. Moreover other fortifications, which are today invisible, have been re-discovered by a systematic investigation of the ground. These fortifications were evidently not constructed regularly throughout the prehistoric era but appear at intervals in large numbers, from which we can readily trace their erection to political causes. Two main types can be distinguished at once : circular camps that are built on a hilltop or plateau, and promontory camps, built to protect the landward approaches of a mountain spur or of a spit of land bounded on its other sides by valleys or river-beds. We also find one other type, the rectangular, which was unknown until the late La Tène period and survived for only a short time.

So far only two camps which can with certainty be classified as neolithic have been found and partially excavated. Not far from Landau on the Isar, at a little place called Kothingeichendorf, there is a big circular earthwork about $1\frac{1}{2}$ kilometres in circumference which lies on the steep right hand bank of the Isar (fig. 1). There are two ditches, both of which are now completely level with the ground, though they can easily be traced by their dark filling of cultivated soil which stands out clearly against the natural yellow loam. The earth thrown out of these ditches was originally used for the construction of a rampart. On the river side of the camp, where the slope is almost precipitous, there is no trace of either rampart or ditches. Entrances had evidently been provided at several points. To the northwest was another smaller camp : here two ditches with a rampart between them enclosed a compound with a diameter of approximately 50 metres.

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Gaps in the ramparts with corresponding causeways in the ditches provided four entrances, one at each point of the compass. At a distance of 12 to 15 metres from the ditches were found traces of a palisade. Judging from the large quantities of pottery found on the site, the camp had been inhabited by people of the Spiral-ceramic period. This form of camp was given up at the beginning of the late Neolithic period and replaced by larger ones of oval shape having a length of anything up to 150 metres and a breadth of 100 metres. Unfortunately this type has not been fully examined as yet: it belongs to the Münchshofen group which is widely distributed throughout south-eastern Bavaria and is very similar to and contemporaneous with the Bschanz-Jordansmühle (Silesia) and Lengyel type.¹ The number of dwelling places throws some light on the density of the population.

The earthworks at Kothingeichendorf, though far smaller than those at Urmitz, Mayen, Michelsberg near Untergrombach and Lengyel, unquestionably belong to the same period as these great monuments; and, like others, they were doubtless erected to guard against the incursions of northern tribes into the country of the Ribbon-ware folk.

An example of late Neolithic work in Bavaria is furnished by the Altheimer type, which takes its name from a circular earthwork near Altheim, not far from Landshut in lower Bavaria. It displays certain similarities to the pile dwellings in the Mondsee and the Attersee as well as to the Remedello culture of Italy and the megalithic culture of the passage graves.² Here, at Altheim, as in the fortified dwellings of the Spiral-ceramic people, it was only a question of defending a small compound. The diameter, as far as it is possible to measure it, is 42 metres. The three ditches are each about 2½ metres broad, 1½ metres deep and from 7 to 10 metres apart. Each ditch was originally strengthened by a rampart and inside the inner rampart was a sort of palisade made of wood and clay. The problem of entrances was solved in this way:—two causeways were left in both the outer and middle ditches about 25 metres apart, while in the inner ditch there was only one of considerable breadth situated about half way between those in the outer ditches. Very little is left of the dwellings as the area has been extensively ploughed, but we do know that they were finally destroyed in battle.

¹ cf. Ebert, *Reallexicon der Vorgeschichte*, viii, 332.

² cf. Ebert, i, 118-20.

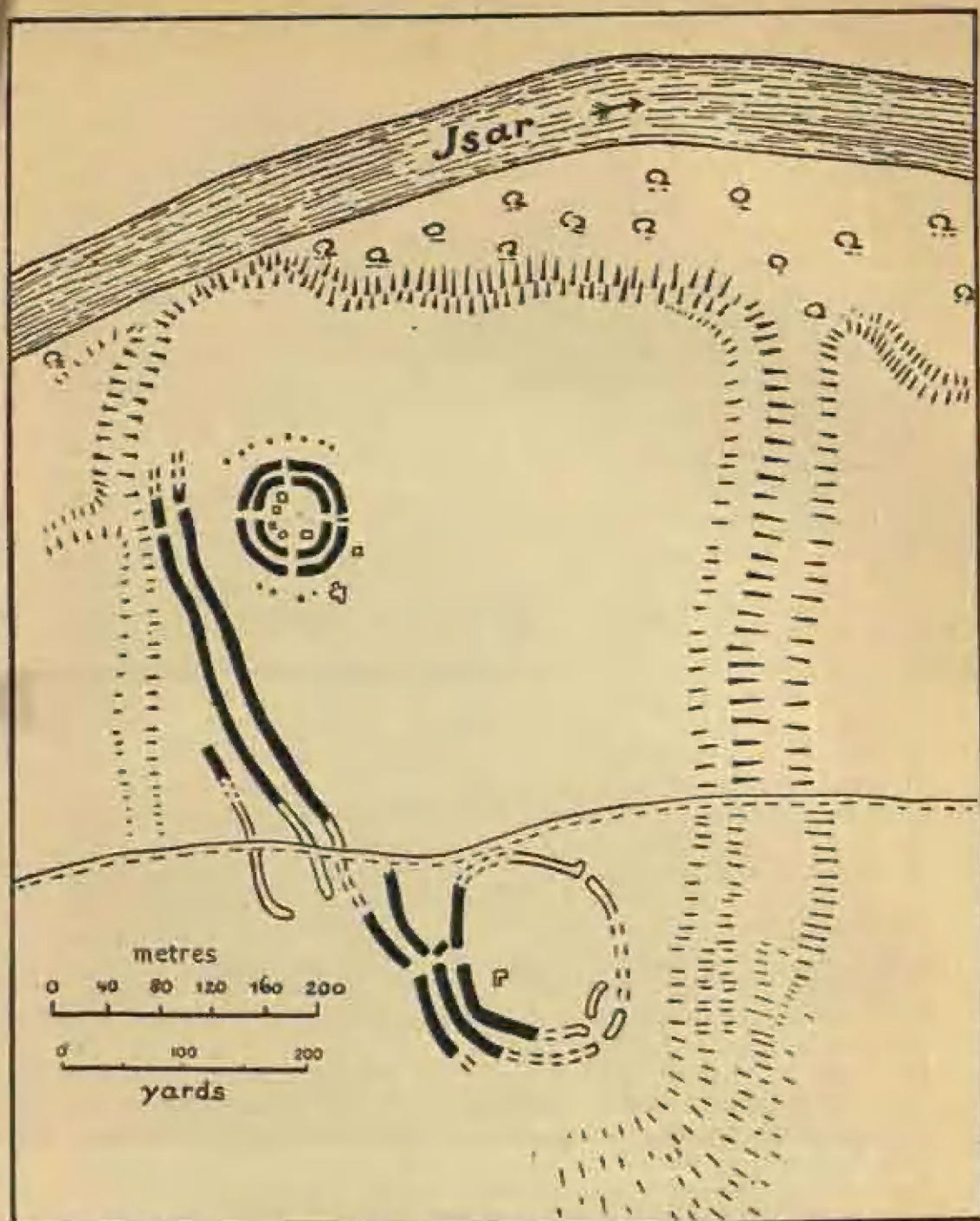


FIG. 1. NEOLITHIC FORTIFIED SETTLEMENT NEAR KOTHINGEICHENDORF, LOWER BAVARIA

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The Bronze Age was a time of quiet and peaceful development and it is only towards the end that it was disturbed by the incursions of the Urn-field people. Their progress through the land can easily be traced by the numerous defensive works which they erected. Their circular and promontory camps are always to be found on sites which possess strong natural defences. What appears to us today only as a bank was as a rule a high, dry wall which was made still more inaccessible by the provision on either side of it of palisades and hurdles. The core of the wall was made of stones or sometimes simply of rubble. In the majority of cases there was no ditch, but occasionally, for better protection, there was a second wall outside the main one. The 'Birg' (fig. 2) on the Kochelsee in upper Bavaria is a splendid example of this type of camp. It is a steep and isolated hilltop, one side of which falls precipitously to the lake, the other sides being fortified by a system of walls. The summit is crowned by a small circular camp. Within the outer walls and inside the circular camp on the summit there are traces of dwelling places. The entrances, as is usual in camps of that period, are just gaps, though it would appear that by making the ramparts overlap at these points an entrance passage was formed. It is still quite easy to follow the path that led through these entrances up to the summit.

The gradual intermingling of the Urn-field people with the native inhabitants produced another period of peace in which the Hallstatt culture reached its highest perfection. But even so defensive measures were not completely neglected, for, although no foreign foe threatened the country, it was still a prey to the internal fights of the great war chieftains who sallied forth against each other continually and so made the erection of fortifications a necessity. They, too, chose places well fitted by nature for defence; their walls were still built of stones placed one on top of the other and not bound by mortar. On the Kirchberg at Schmähing in Swabia post holes have been found at irregular intervals both outside and inside the walls. The posts were originally bound together by hurdles on either side and were also anchored to the wall by beams of timber placed diagonally. The hurdles were covered with a coating of clay which acted as a protection against weather and fire; this, of course, added considerably to the strength of the wall. The ditch outside was evidently not continuous but a wooden palisade had been constructed which must have proved a formidable obstacle.

The Celts, as they extended the boundaries of their kingdom on either side of the Danube and the Main, were responsible for the



FIG. 2. FORTIFIED HALSTATT SETTLEMENT ABOVE THE LAKE OF KOCHER, UPPER BAVARIA

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destruction of many of the Hallstatt forts; in place of them they built defensive works of their own which enclosed very large areas. There is some doubt as to whether this took place immediately after their occupation of the country or whether, as seems more probable, they postponed it until such time as it was forced upon them by the attacks of the Romans and Germans. These Celtic fortifications are certainly the most impressive that remain in Bavaria from pre-Roman times. Some are situated on hilltops, others on flat ground, while quite a number are built on sites which had been previously occupied. They built either circular or promontory camps according to the configuration of the ground. The area enclosed was usually very big, far too big for a small settlement, and was probably designed to afford shelter to the inhabitants of a whole district together with all their goods and chattels. These Celtic citadels (*oppida*) are to be found all over Bavaria but the majority of them are near the Danube. We know for instance the promontory camp on the Stätteberg, which incidentally encloses within its area a circular camp of the Hallstatt period, and is probably the place referred to as *Parrodunum* in the *Notitia Dignitatum*. We know, too, Manching (*Vallatum*), enclosed almost completely by a circular wall except at one point where the river bed completes the ring of defence: this camp has a circumference of over 6 kilometres. Then there are the promontory camps of Gauburg (*Alkimoennis*, near Kelheim, fig. 3) and the Frauenberg (above Kloster Weltenburg) which was, until quite recently, wrongly identified as Artobriga. There is the circular camp with two concentric walls on the Ringberg near Saal below Kelheim, the site of the camp (now vanished) on level ground near Straubing (*Sorviodurum*) and the high ground near Pleinting (fig. 4) which is fortified. In Passau the Celtic wall of Boiodurum, which had been broken down, was discovered below the late Roman wall.³

In choosing sites some attention was evidently paid to ease of communications in addition to suitability for defence and, in the case of Alkimoennis, industrial requirements undoubtedly played some part. There the Celtic town lay at the foot of a fortified hill and this position was chosen on account of the presence on the heights of the Jura of iron which was mined by the inhabitants. There is still abundant evidence to be found of their industrial activity. The fortifications which crowned the spit of land falling sharply to the

³ Reinecke, *Germania*, iii (1919), 58.

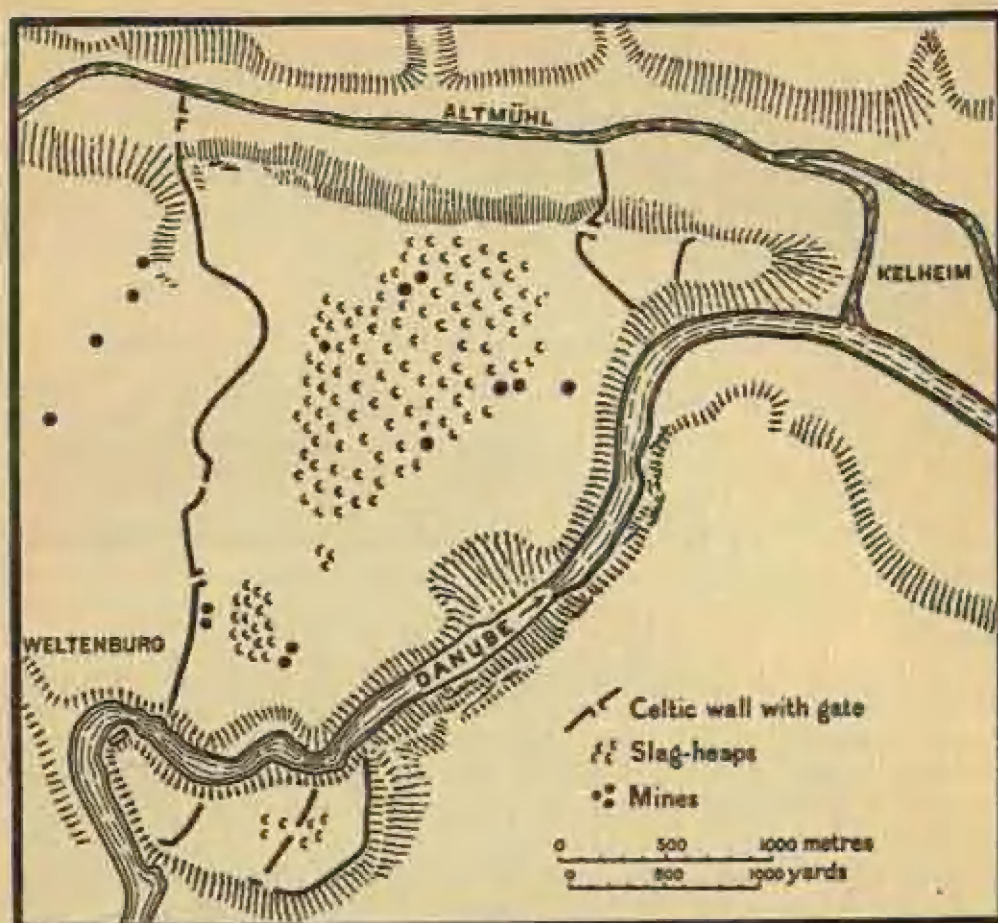


FIG. 3. CELTIC FORTRESSES NEAR KELHEIM (ALKIMOENNIS AND WELTENBURG, LOWER BAVARIA)

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Danube and the Altmühl on either side formed the acropolis of the city which was laid out in the valley. On the eastern end of the hill was the first rampart, part of which is today in ruins, and part of which remains as it was rebuilt at the time of the Hungarian invasion in the tenth century.

The two ramparts on the western end of the hill begin on the steep bank of the Danube and run to the bank of the Altmühl, making full use the whole way of the existing contours of the land. In length they are respectively 1200 and 4000 metres. The ditches do not appear to have been dug very thoroughly. At the back of the hill and in the valley of the Altmühl can still be seen the entrances, some of which are well preserved. As usual in Celtic works, they are protected by recurved walling. There can be no doubt that the outer wall was built to protect the mining area.

Close to this camp is another smaller camp on the right bank of the Danube above the Kloster Weltenburg. Here again we have three walls protecting a promontory site. The inner wall of the three was greatly increased in height in Hungarian times, when a mortar-built wall, towers and a ditch were all added.

With regard to constructional details of the Celtic wall, it is interesting to note many examples in Bavaria of the *murus Gallicus* mentioned by Caesar. But indeed all the Celtic and pre-Roman walls of Bavaria need much more careful study than they have yet received.

Peculiar to the late Celtic period are the so-called rectangular earthworks,⁴ all of which are distinguished by the uniformity of their construction and their clearly marked area of distribution. Archaeologists of the nineteenth century attributed them without exception to the Romans, and, in consequence, came to very sweeping conclusions concerning the occupation of southern Germany by the Romans, but more careful comparison with genuine Roman camps has shown these theories to be untenable. Rectangular earthworks have been found all over the area bounded by the Alps, the Schwarzwald, the Main, the Böhmerwald and the Inn. Indeed there are over two hundred known in that territory although they are not evenly distributed throughout it, far more being found in the south than in the north.

In most of them one side is from 80 to 100 metres long; but the sides are not of the same length. Outside is a ditch of v-shaped

⁴ Reinecke, *Der Bayerische Vorgeschichtsfreund*, 1-11 (1921-2), 39-44.

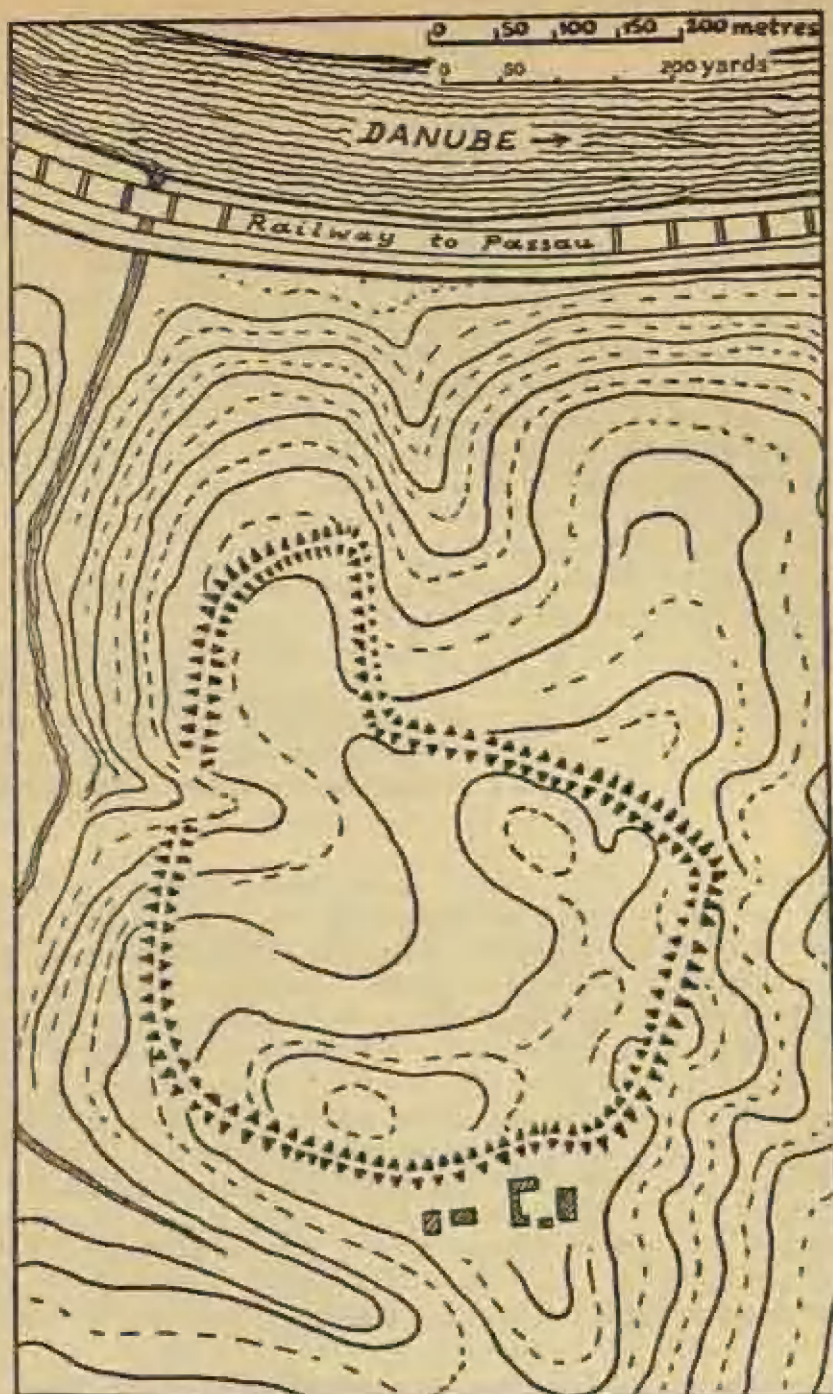


FIG. 4. CELTIC FORTIFIED SETTLEMENT NEAR PLEINTING, LOWER BAVARIA

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construction from which the soil was removed to form the rampart. The angles at the four corners are very sharply defined, quite contrary to Roman practice, where the corners are always rounded off. As a result of the earth being thrown up from two directions at the corners, the bank is naturally higher there than elsewhere. There was only one entrance, which was situated in the centre of one side and consisted simply of a breach in the rampart.

Excavations undertaken in Württemberg, where many of these rectangular earthworks were examined, show that the entrance was paved and was flanked by two rows, each consisting of three strong wooden posts, which may have carried wooden super-structures such as towers or gatehouses, or may only have served to give additional support to the ends of the walls. The ditch runs straight past the entrance and was probably spanned by a wooden bridge. As far as it is possible to estimate them, the height of the wall and the depth of the ditch must both have been about two metres.

Variations from the normal are encountered every now and then; one side for instance is occasionally not in one straight line, with the result that the camp appears to be five-sided, or the length of one side is greater or smaller than its corresponding side. At Gerichtstetten in Baden⁸ it is uncertain whether the camp had three entrances in the first place or whether two more wide entrances were added at a later date.

In some cases the camp is placed inside a surrounding wall. Two big rectangular earthworks of this type can be seen at Deisenhofen, south of Munich (figs. 5 and 6). The most easterly of the two (fig. 5), is built inside a much bigger rectangular earthwork with sides about 500 metres long. It has an entrance on the eastern side, and is so built that its western wall coincides with that of the larger earthwork which surrounds it. The western camp has another earthwork thrown out to protect it; this is four-sided and is actually wider than the camp itself. In each case the entrance is on the south side. On the north side a deep, dry ravine and a small valley provide additional natural protection. This double camp is again enclosed by a large, rectangular earthwork which is about 450 metres broad and 700 metres long, with one entrance on the south side. Not far from this entrance the Roman road from Salzburg (*Juvavum*) to Augsburg

⁸ Schumacher, *Veröffentl. d. Grossh. Bad. Sammlungen f. Altertums- und Völkerkunde*, ii (1899), 75-84.

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(*Augusta Vindelicum*) has pierced the ramparts and cuts off the south-west corner of the area, thus proving conclusively that the earthwork belongs to the pre-Roman period. It is worth noting that in both cases the measurements of the inner ramparts and ditches are greater than those of the outer.

At Gennach in Swabia there is a rectangular camp with outer defences in the form of a semicircle, while at Sallach in lower Bavaria, where there is a double camp, the inner and outer fortifications are joined by ditches and ramparts.

The interiors of these rectangular camps have only rarely been excavated and no signs of dwelling places or continuous occupation have been found. Strangely enough, most of the objects recovered were found in the corners. On the evidence of these finds however we can assign all these camps without hesitation to the late La Tène culture of the last century B.C. Contrary to the usual pre-Roman custom, very little use is made of natural features for defence, and most of the camps are either on level ground, on a gentle slope, or at the foot of a small hill; sometimes a camp will be found completely isolated, at other times a large number will be found quite close together. In view of their similarity of outline

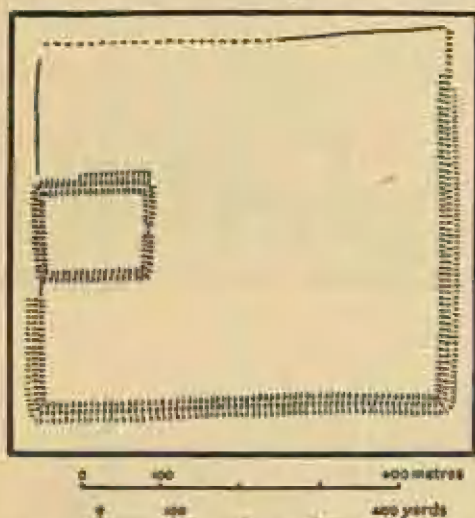


FIG. 5. EARTHWORK NEAR DEISENHOFEN, UPPER BAVARIA

with Roman camps one would suppose that the Celts were familiar with these.

The purpose for which they were built has been variously explained. If we consider their outline (compared with that of the Roman military camp), their size and construction, their measurements, the period of warlike activity in which they were built and the fact that practically no remains of permanent habitation have been found inside them, we should feel bound to assume that they were planned for military use.* On the other hand, in view of the poor strategic

* Bersu, *Fundberichte aus Schwaben*, N. F. iii (1926), 61-70.

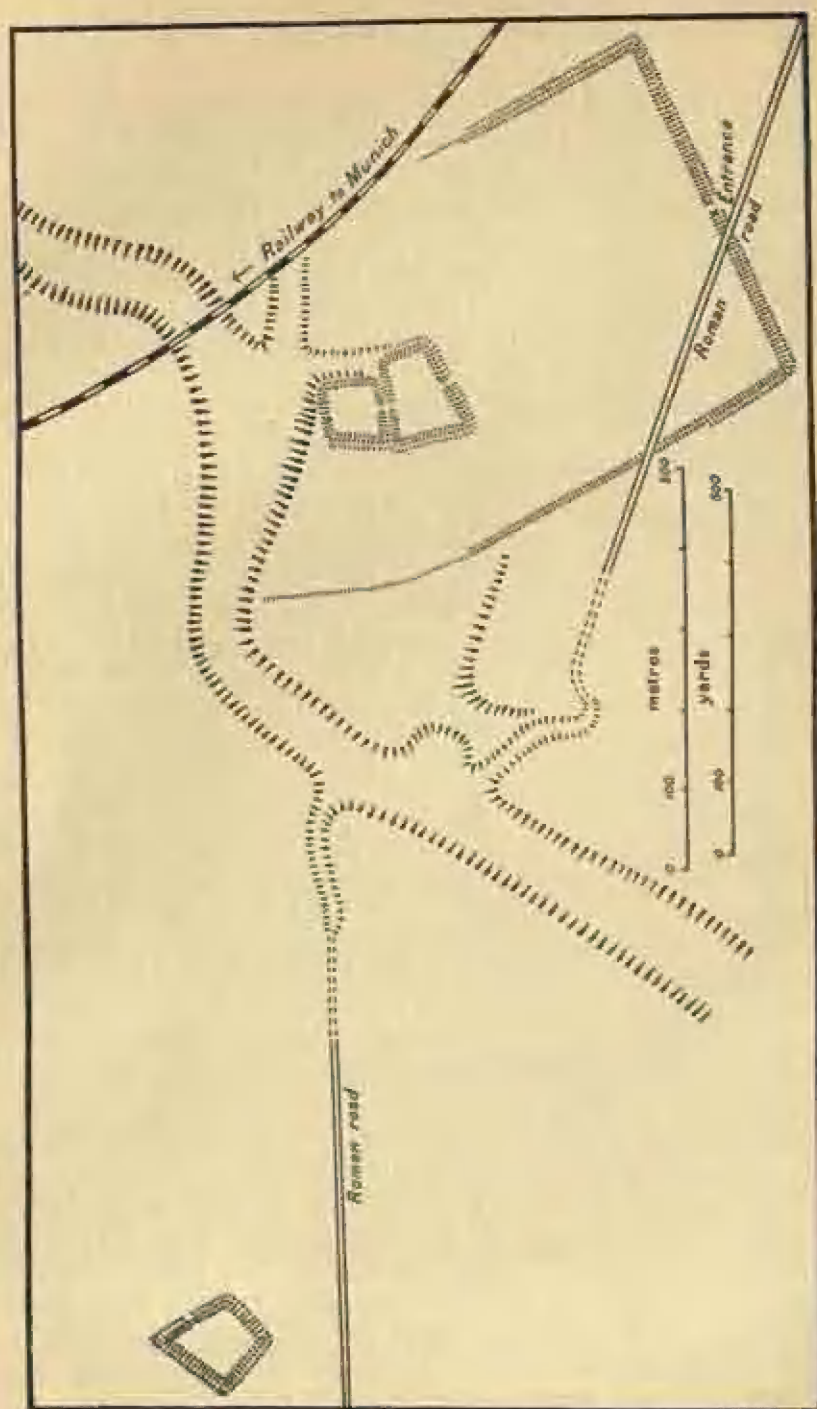


FIG. 6. QUADRILATERAL EARTHWORKS NEAR DEISENHOFEN, UPPER BAVARIA

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positions in which they are often placed, the inadequate protection that they would afford against a determined attack, and their abundance in certain districts, they can have had but little military value. We should feel more inclined to regard them merely as defended Celtic compounds.

Unless we should make some entirely fresh discovery through further excavation, the difficulty of deciding between these opinions will remain. We are at least safe in assuming that their construction and the military events of the time were not unconnected, though we do not know whether we should attribute their origin to the campaign of Ariovistus or to the conquest of South Germany by the Romans, and the incursion of the Germanic hordes from the North. Their complete absence in Celtic-Noric territory would thus be explained. The sparsity of cultural remains would tend to show that they were not permanently occupied, and they probably served as refuges in times of trouble to the inhabitants of neighbouring villages or large estates.

Possibly it would help us to solve the problem if we knew the relationship between the rectangular camps and the big Celtic towns.

The Discoveries at Ur, and the seniority of Sumerian civilization

by H. R. HALL

THE British Museum, jointly with the University Museum of Philadelphia, is carrying out at Ur 'of the Chaldees' what is now, since a slower pace has set in with the work of Evans at Knossos, the most important British archaeological excavation. Nothing like the recent discoveries at Ur has indeed been seen in a European museum since the appearance of Schliemann's finds at Mycenae, and no such rich find of gold objects has been made since the discovery of the wealth of Tutankhamon. Like Mycenae and Knossos, Mr Woolley's discoveries tell the archaeologist a very great deal that he did not know before. They may justly be claimed as the most important work of the kind now being carried on by any British or American museum or society, whether singly or jointly. The *personnel* is now wholly British, but Philadelphia pays half the piper and calls half the tune. This 'fifty-fifty' relation of absolute parity between the two museums is as it should be, and the two nations are to be congratulated on their harmonious partnership in the most important archaeological excavation in the world. I stress this for I do not think that the great importance of Mr Woolley's finds is sufficiently realized. Not merely because they contain a lot of gold, as they do (and since gold of itself doth attract a journalist, this fact has received some public attention), but because they tell us so much that is new, which Tutankhamon, for all his splendour, did not. We may find this fact appreciated now that Mr Woolley's first provisional publication of this year's (1927) finds has appeared in the January (1928) number of the *Antiquaries' Journal*, to which I must refer my readers for detail. The finds themselves were on view for six months this year in the British Museum, time enough for all those interested in such matters to have made themselves familiar with the biggest 'scoop' that any archaeologist has made since Carter found Tutankhamon, or Evans Knossos. I cannot call to mind any foreign work that equals it. The Swedes recently at Dendra

PLATE I



FIG. 1. FRAGMENT OF LIMESTONE STELA SHOWING CHARIOT DRAWN BY ASSES OR ONAGRIFFS :
UR. 4, + 3000 B.C. LENGTH 10½ INCHES.
From the 'Antiquaries Journal', by permission



FIG. 2. STONE VESSELS, SUMERIAN PERIOD: UR. HEIGHT OF TALL VESSEL 14½ INCHES.
From the 'Antiquaries Journal', by permission

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(Mideia), the Germans before the war at Qala 'Sherqat (Ashur), may run it close in interest and intrinsic value of finds, but are only runners-up. The great discovery this year of the tombs of Meskalamdug and Shubad, with their fuller treasure of gold, still more accentuates the value of the Ur excavations.

What Woolley and his helpers discovered last season is a necropolis of early graves, of three different periods, in three superimposed strata. This was found within the later *temenos* wall of the temple, but was no doubt originally outside the *temenos*, which was enlarged. The highest graves are of the time of the Akkadian Sargonide kings (c. 2700-2600 B.C.); the second series is of the first dynasty of Ur (c. 3100-2900 B.C.): Mr Woolley dates the tombs 'between 3200, or rather earlier, and 3100 B.C.'; the third, and lowest series, in Mr Woolley's opinion, dates well before the first dynasty, and is to be assigned the provisional date of 3500 B.C.

The most interesting graves are of course the lowest, as belonging, on Mr Woolley's shewing, to a period previously unknown from contemporary remains except some few of great interest brought to light recently by the Oxford and Chicago joint expedition of Prof. Langdon and Mr Mackay at Kish.¹ The first dynasty we already knew from the contemporary temple-remains at al-'Ubaid, discovered by myself and Woolley, and recently published by us.² Graves of the time were found there by Woolley, but those at Ur have far transcended these in interest and in wealth. For they are the graves of the kingly family of Ur itself, of the chiefs of the city at its earliest period of civilization and power, their relatives and their retainers. And they have proved almost to rival the shaft-graves of Mycenae, in their wealth of gold, electrum, and silver, besides semi-precious stones such as lapis lazuli and carnelian. Also the art shewn in the use of these materials for making the grave-goods of the dead royalties and their friends, has been a revelation to us. Mr Woolley, on his reading of the evidence of stratification of the site, considers these treasures to belong to a period anterior to the first dynasty. Their style, on the other hand, does not seem so archaic as that of the objects from Kish, and it may well prove that they belong merely to the beginning of the dynasty, and so are not older than, at the very earliest, c. 3200 B.C. Oddly enough, the one object that does not look very archaic, and might well be contemporary

¹ Langdon, *Kish* (1924).

² Hall and Woolley, *Al-'Ubaid* (1927): see review in *ANTIQUITY*, i, 490-2.

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with early Kish, namely the relief (fig. 1) depicting a chariot drawn by onogryphs (?),² is distinctly stated by Mr Woolley to belong probably to the second series of graves. Clearly we are not yet sufficiently instructed in the development of art at this early time to be able to dogmatize as to the succession of styles: we must wait for further information. It would not be surprising if Mr Woolley's date for the oldest graves proved to be too early by two or three centuries; but, on the other hand, he may prove to be perfectly right. We can at any rate say with approximate certainty that they are not older than 3500 or later than 3000 B.C., and that their date may prove eventually to lie midway between the two, or a century later, but on this point we have yet no certainty.

If this were so, Ur I and II would both equate with the first dynasty and the immediately succeeding period, from c. 3200 to c. 2800 B.C., and we should have to explain certain phenomena of stratification (a blank stratum between Ur I and II), and of the development of pottery in Ur II, Kish, and al-'Ubaid, differently from Mr Woolley. The first word on the subject lies obviously with the excavator and it is to his conclusions, formed on the spot, that first consideration and respect must be given, though modifications from the point of view of the philological and artistic critic must be expected and may or may not justify themselves. Provisionally we will assume with Mr Woolley therefore that c. 3500-3200 B.C. is the date of the tombs of Ur I or Ur A; the latter is perhaps the safest designation, as Mr Woolley may yet find something much older than the oldest of the three cemeteries.

What are the characteristics of the graves of this most ancient Sumerian necropolis of the historical period and what do they contain? Mr Woolley tells us that in the two older cemeteries, Ur A and B (the latter is superimposed on the former) two styles of burial were in use: (a) larnax-burials, in which the body was either laid in a clay coffin or was placed on the ground and covered over with an inverted clay coffin, and (b) inhumation: 'the body was wrapped up in matting and laid at the bottom of a grave-shaft itself lined with mats; the offerings were placed beside it, and another piece of matting was spread over the whole, and the earth was thrown back into the shaft. These are the two main

² I do not share Mr Woolley's belief that these animals are lions. 'They have lions' feet and claws, certainly, but their hindquarters and tails are those of asses: nobody ever saw a lion with a sweeping, bushy tail like that. A lion's is like a pump-handle. The heads may have been of lions, but may equally possibly have been of gryphons.

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types ; but in the middle and the later periods there were introduced certain modifications of them. Thus instead of the mat-lined shaft we find occasionally a wicker-work coffin, the sides made of normal matting supported by uprights or ribs of stout withy, or more solidly constructed of split withies like a modern hurdle, and instead of the clay larnax there were in two cases regular wooden coffins. Obviously such modifications bridge the gap between the two main types, and it would be hard to decide whether the coffin of withies belongs rather to the inhumation class, because of its material, or to the larnax class, on account of its shape ; but generally speaking we may say that throughout the period 3500 to 2600 B.C. there existed these two contemporary and different forms of burial. It is curious that whereas the clay larnax must have been a more expensive thing than the plain piece of matting and might therefore be expected to connote a richer burial, the facts were the reverse ; in only two cases was a larnax accompanied by really good and numerous objects, and all our best discoveries were in connexion with the inhumation graves'.

Mr Woolley thinks that he noted signs of partial cremation in the older graves : ' as a rule only the head has been burnt, and in some cases the fire has been made outside the grave proper and the bones have not been so much as scorched : this is really but a ritual survival of an older cremation practice'. The German excavators thought they had noted something of the sort in the necropoles of Zurghul and Farah : it will be interesting to see if the observation is confirmed by later finds. Generally other explanations than an attempted cremation-rite are preferred for partial burnings or apparent burnings of this kind. Certainly in later days the practice was entirely unknown, as it was always in Egypt.

In the oldest graves inhumation is much commoner than larnax-burial. The bones were in very bad condition, but, when they could be distinguished, in both types of burial the legs were strongly flexed and the hands brought up to the face, without regular orientation. Clay figurines may have been placed in the graves, large pots were disposed around them, and large model boats made of clay and mixed with bitumen and chopped straw charged with cargoes of small pots, which remind us strongly of the model funerary boats of Egypt, were placed near the body at the bottom of the grave-shaft. The pottery vessels placed round the grave are all *wheel-made* and unpainted ; the most

⁴ Woolley, *Antiq. Journ.* (Jan. 1928), viii, 5, 6.

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interesting type is an offering-table with shallow bowl on a hollow cylindrical stem splayed out at the foot, and adorned with incised patterns and sometimes triangular holes. Stone vases of steatite and alabaster are common, and the shapes of the latter often closely resemble Egyptian types of the Old Kingdom, especially the plain cylindrical form (fig. 2). Copper bowls and small cauldrons were found, and lamps of copper and silver of a form derived from a shell.

Probably it is the metal-work that attracts most attention in the objects recovered from these graves. The golden *étui* or 'vanity-case'³ with its ear-pick, head-scratcher, and tweezers (fig. 4), is paralleled by others in silver and copper: in some, the case was of copper covered with leather. Its decoration of fine running spirals in pairs and of zigzags is most important in the history of art. At present it is the fashion to derive the Aegean and Egyptian spirals exclusively from Danubian and 'Black Castle' sources, from Butmir or from Cucuteni;⁴ but this find at Ur brings us back again to the older explanation of an origin in gold wire-work such as we see at Troy II and was assumed to be of Asiatic origin. Is Cucuteni I as old as Ur A? The golden dagger (fig. 6), recently published in colour by the *Illustrated London News*,⁵ is, like its newly-discovered rivals in gold and copper from the tomb of Meskalamdug, as remarkable as the gold and iron daggers from the tomb of Tutankhamon, and is at least 1500 years older than they. The electrum adze-axe (fig. 7), and lancehead (fig. 5), are wonderfully finely made. And the adze-axe is socketed, as also are other copper axes of the same form, and silver and copper axeheads of another type (fig. 9), somewhat like a pick, with a curved lower surface. We also find axeheads with the socket not yet developed: the butt of the head is turned round the haft after being thrust through it, so as to hold faster: the socket is in the making here, and evidently was just invented at this time. Copper spearheads are found with square tangs like the electrum lancehead: the socket had not yet been applied to them. Then there is the jewellery, the necklaces of gold, silver, lapis, and carnelian (fig. 8). The use of silver and lapis is noticeably

³ *Brit. Mus. Quarterly*, 1927, pl. xx.

⁴ Childe, *Dawn of European Civilization*, p. 27; Frankfort, *Studies in Early Pottery of the Near East*, iii, 116ff. The decoration of the Ur *étui* is not unlike that of the bronze axehead with pick in form of a panther recently found at Mallia in Crete (Charbameaux, *Mém. Fond. Piot.*) which is of M.M.I. date (c. 2000 B.C.)

⁵ See also *Antiq. Journ.*, viii, pl. 9.

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more common than in Egypt, as was to be expected from the fact that both these materials were more easily accessible to the Babylonians than to the Egyptians: Egyptian silver must always have come from Asia Minor and lapis from Persia. As early as 3000 B.C. silver was not known to the Egyptians, though lapis was. The goldwork of these Sumerian necklaces is very fine; the gold beads are often worked in raised spirals that remind us of Greek work, while the general *facies* of the jewellery is extraordinarily reminiscent of the Egyptian jewellery of the twelfth dynasty from Lisht and Dashur. There is however no inlay in gold of the Egyptian and Minoan character, but coloured ivory and stone were patterned together as we see in the remarkable gaming-board (U. 9000), and inlay of this kind we know at the time in the eyes of figures of men (fig. 3) and animals. The working of the stone beads is extremely good, those of lapis being especially fine. And their arrangement is tasteful, generally speaking, and such as a twelfth dynasty Egyptian would have approved, though it must be confessed there are others that he certainly 'would not have been seen dead with.' These are set of extraordinarily large beads of gold, lapis, and carnelian, of Brobdignagian and tasteless proportions such as no Egyptian could have tolerated! These beads are among the more astonishing products of this period, and it is hard to believe that they really are, many of them, as old as the early Sumerian period. Yet the evidence is quite conclusive on that point. They are at least as old as 3000 B.C. The twelfth dynasty Egyptian necklaces with which we have compared them are a thousand years younger. Very remarkable is the gold chain-work. An imitation chain of the same kind is a curious development. But the grave-ornaments the most unexpected, perhaps, are the gold diadems, of which the larger belongs to the second, or middle cemetery. It has rather roughly outlined figures on it of men and animals. Here we have the prototype of the gold diadems of Mycenae. And other such diadems, and gold masks, again like Mycenae, which have been found in Assyria, and have been credited to the Parthian period, are shewn by this discovery to be probably much older.

An extraordinary little bibelot of gold is an amulet in the form of a sitting bull, only 16.5 mm. high. What is remarkable about him is that he has a little false beard originally tied on with string! Mr Woolley gives a very possible religious explanation of this appendage, but what interests us more here is the wonderful workmanship of this little example of the goldsmith's art: 'the body is somewhat summarily rendered, but upon the head no pains have been spared. Equally remarkable is

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the fineness of work in two other gold amulets found, representing birds'.

Utensils, such as spouted vases and lamps, were made of silver as well as copper. A beautiful little lamp of silver, in the form of a spouted bowl, is fluted and engraved. 'It belongs to the earliest period (3500 B.C.) and is an astonishing example of the skill attained by the metal-workers of that date; the fluting is almost mechanically regular, and though the engraving is quite simple in design, it is in spacing and proportion perfectly adapted to the form of the vessel'.

The relics from the second or middle cemetery, which is certainly of the first dynasty, probably its end, are poorer in character and workmanship. But we see among them the first of the large cylinder-seals, which in the first or uppermost cemetery are numerous. They are characteristic of the Sargonide or Akkadian period. A remarkable find, unconnected with the cemetery, was that of a rectangular stamp-seal of steatite with a figure of a bull engraved upon it of precisely the same type and style as the 'Indo-Sumerian' seals found at Mohenjo-Daro in Sind and Harappā in the Punjab, but with a cuneiform instead of an Indian inscription. This clinches the matter of a connexion before 2000 B.C. between India and Mesopotamia (probably by sea).

It is obvious that Mr Woolley's is one of the great archaeological discoveries. Luck, combined with skill, has in his case produced important results. When I first began work at Ur in 1919, I did not dream of the possibility of such discoveries *à la* Schliemann. For the two comparisons which at once spring to the lips are firstly Schliemann's finds at Mycenae, and secondly Petrie's at the first dynasty tombs at Egyptian Abydos. The graves and their richness in gold remind us of Mycenae, while the general *facies* of the remains is strongly reminiscent of those at Umm al-Qa'ab, the place of the tombs or cenotaphs of the oldest kings of Egypt at Abydos. And, as Mr Woolley points out, this comparison is the more pertinent because the two finds, in Egypt and Babylonia, are more or less of the same date. And they also both belong to the same stage in the development of the civilization of their respective countries. Comparison between the two is therefore very interesting, and is important in view of the debatable question whether the Egyptian or the Sumerian is the older culture. Ur in the near future may throw some light on this question.

We note at once not merely analogies such as are probable enough between two cultures in the same stage of development, and prove nothing, but actual resemblances in detail such as the extraordinarily

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close resemblance of the cylindrical alabaster vases from Ur to those of the first Egyptian dynasty from Abydos. The analogous use of boats in the funeral goods I would not press, as in both countries the boat was in continual use and would easily be modelled for funerary purposes: boats are equally characteristic of both countries and there is no resemblance between the two types of boats, the Babylonian being of the high-prowed and high-sterned *bellam* type still characteristic of the Two Rivers, the Egyptian of the usual Nilotic type. But the striking similarity of the alabaster vases in both lands takes its place alongside three other pieces of evidence that have often been quoted as proofs of early connexion between Egypt and Sumer: the pear-shaped stone maceheads, the cylinder-seal, and the crenellated or panelled brick wall. Oddly, this macehead does not occur among these finds at Ur. It has been noted that most of the things in which archaic Egyptian culture so definitely resembles the Sumerian are things that are at home and are permanent in Babylonia but in Egypt are not precisely ephemeral but at any rate impermanent. They were not at home in Egypt and they died out there comparatively early. This is so in the cases of the panelled wall, the cylinder-seal, the macehead (though its hieroglyphed shape continued in the writing), and, to quote another instance, the treatment of the head of the lion, which in first dynasty Egypt shewed the truculent visage and grinning teeth that we also see in Sumerian Babylonia, and remained always characteristic of Mesopotamian art till the end, whereas in Egypt it had been abandoned as early as the time of the Pyramid-builders for the typical Egyptian lion-face, with its closed lips and air of silent majesty, and never reappeared there till late Saïte times, when Assyro-Persian influence brought it back. This certainly looks as if these early resemblances in Egypt to Sumerian artistic traits were not coincidences, and were in fact borrowings from Babylonia by Egypt, where they were not at home, and where they soon died out. We see then that there is a probability that early Egypt borrowed from Babylonia, or from a common source which was also the origin of Babylonian art, whereas Babylonia borrowed little or nothing from Egypt. The resemblance of the processions of animals in relief on Sumerian stone vases to those on Egyptian 'polettes' of the proto-dynastic period is striking, but we do not know whether the one style was imitated from the other or whether a common origin elsewhere is not more probable. The monkeys in early Sumerian art may be as probably of Indian as of Egyptian origin. In fact we see no specifically

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Egyptian traits in Babylonian art from first to last. And this would seem to argue the chronological priority of Babylonian art.

Now when we compare the results of the Ur excavations with those at Abydos we are struck with the impression of more developed culture and art that the former give. First of all we note that according to Mr Woolley the potter's wheel was known to the Ur potter, while to the first dynasty Egyptian it was not. It had not yet reached him. The Sumerian superiority is very noticeable in the necklaces of gold, carnelian, and lapis beads, in the silver lamps, and above all in the weapons. The superiority of the Babylonian jeweller is marked at this time, in spite of the occurrence of fine combinations of gold and stones at Abydos. But that of the weapon-smith is crushing. If these two cultures were roughly contemporary, the Babylonian had developed the manufacture of metal weapons to a pitch which the Egyptian was nowhere near attaining. We have only to compare the gold and copper daggers and above all the electrum adze-axe and lancehead from Ur with first dynasty Egyptian weapons to be convinced of this superiority at once. Not only did the Egyptians at this time not produce any swords or daggers that we know of like this, or anything approaching an equality with the Sumerian axehead, but they never did produce anything so good as the hafting of the axehead. The Sumerian had just invented the socketed axehead, and we see what a beautiful weapon he had made, not only in the electrum adze-axe, but also in the silver and copper axes discovered. The Egyptians now were using copper axeheads or billheads of simple rounded form, stuck into the haft, with no notion of a socket. The Sumerian haft was very like the later Egyptian, with its slightly curved line, and this form may have been adopted later by the Egyptians, but for some reason they never adopted the socket, though they must have known of it. Even when a thousand years later they developed their own axehead into a more serviceable hatchet-shaped form, with a blade more formidable for fighting than were the two early Babylonian forms, they never took over the socket for the axe, though they early adopted the socketed spearhead, which the Babylonians had not yet invented in the early period. We do not know why the Egyptians would have none of the socketed axehead, but they always preferred their axehead thrust through the haft and bound to it by leather thongs. It may perhaps have been just as efficient as the socketed head. But mechanically it was primitive, whereas the ancient Babylonian invention, which spread everywhere else in the world, was a great step in advance. And it is the lines, the design

PLATE II



FIG. 3. PRIEST HOLDING SPOILED VASE—INCISED SHELL PLAQUE: UR, c. 3000 B.C. HEIGHT 3 INCHES
From the *Antiquaries Journal*, by permission



FIG. 4. GOLD 'VASE' CASE, HOLDING TWEEZERS, EAR-SCOOP, AND BACK-SCRATCHER ON A RING: UR, c. 3000 B.C.



FIG. 5. ELECTRUM LANCEHEAD: UR, c. 3000 B.C.

PLATE III



FIG. 6. GOLD DAGGER WITH LAPIS LAZULI HILT—OPEN-WORK SHEATH OF GOLD.
UR. 2, c. 3000 B.C. TOTAL LENGTH OF DAGGER $14\frac{1}{4}$ INCHES

PLATE IV



FIG. 2. FLINT ADZE-HEAD (UK, A. 3. 1000 B.C.). LENGTH 5/8 INCHES.
From 'The British Museum Quarterly', by courtesy of the Director

PLATE V

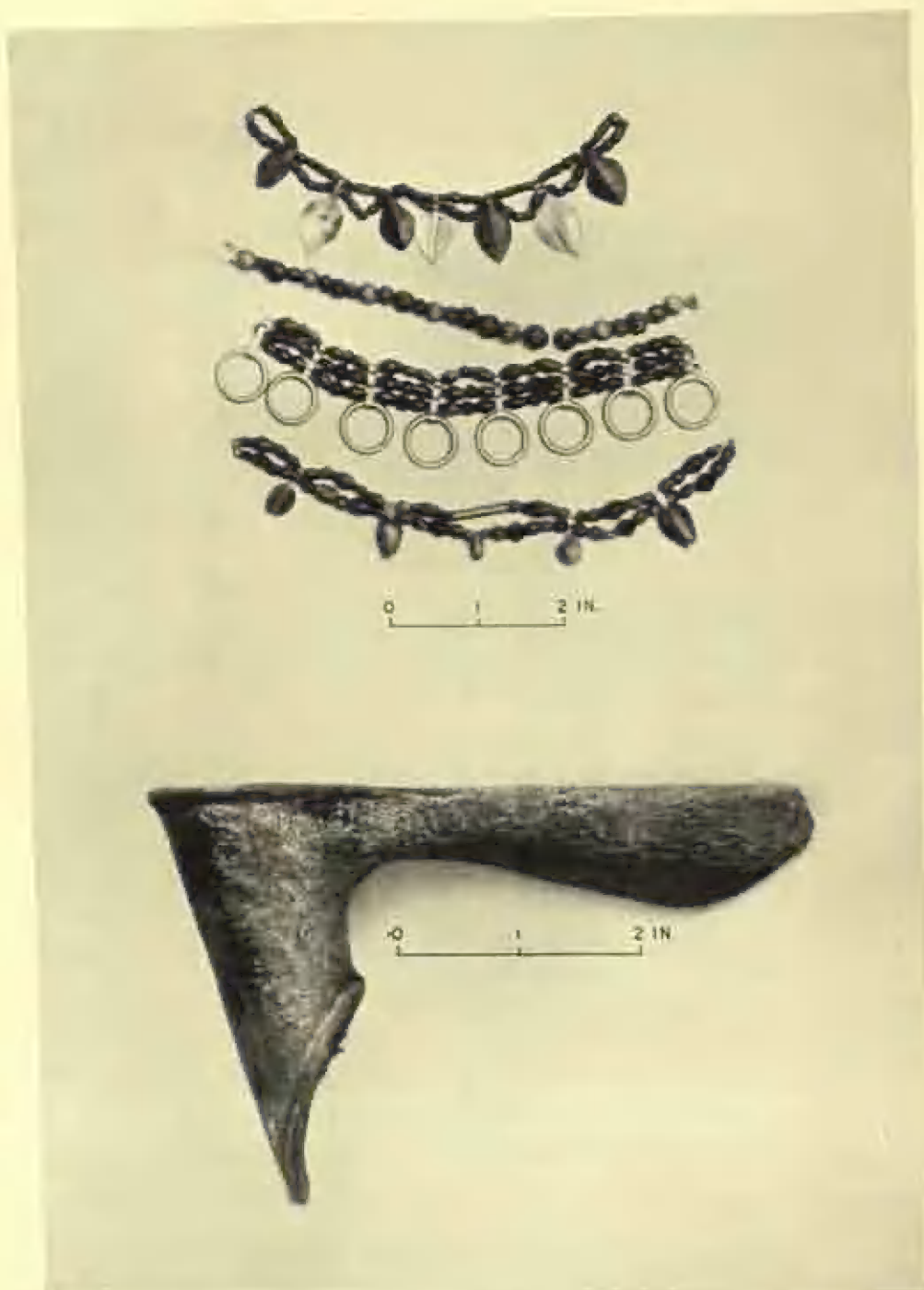


FIG. 8. GOLD AND LAPIS NECKLACES: UR, c. 3000 B.C.

FIG. 9. SILVER AXEHEAD: UR, c. 3000 B.C.



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of the Sumerian weapons, that strike us as so greatly superior to that of the supposedly contemporary Egyptian weapons.

Leaving weapons again we see in the spouted jug a Sumerian superiority over Egypt. The Sumerian must have invented the spout, which we also see commonly in their pottery at this time, but which is absent normally from Egyptian vase-making in metal or pottery until the Pyramid-period, although foreign imported vases (from Syria) with a spout are found in late predynastic Egyptian graves.

I have not space in which to elaborate this theme of the greater superiority of the Sumerian culture over the Egyptian contemporary civilization, if they were contemporaries. It is largely a matter of the general impression that study of the two cultures gives. And if the Sumerian was the superior, and they were contemporary, the conclusion inevitably forms itself that the Sumerian was the older of the two, the senior culture, from which the junior borrowed, whereas the senior borrowed nothing from the junior.

The impression of general contemporaneity is definite. Both cultures shew a general resemblance in their works of art, they are obviously roughly at the same stage of development, they use the same materials and arrive more or less at the same results. And any observer would say that they ought to be more or less contemporary, that they look as if they were the parallel result of nascent civilizations such as would be expected in two peoples developing in more or less the same region of the world at more or less the same time. And this apart from any question of actual borrowings.

How far can we ascertain their respective dates? The date of c. 3100-2900 B.C. (earliest possible 3200) for the first dynasty of Ur is that now generally accepted as the result of the critical work on the subject of Babylonian chronology carried out by a number of scholars reinforced by the astronomical researches of Prof. Fotheringham.* This takes us back to roughly about 2700 B.C. for the great king of Erech Lugalzaggisi, the predecessor of the famous kings Sargon, Urumus, Manishtusu, Narām-Sin, and Sargani-šarri of the dynasty of Akkad, the date of which falls between 2700 and 2500. This puts the earlier *patesis* of Lagash from Urukagina (contemporary of Lugalzaggisi) back to Urninā between 2900 and 2700, with the result that Lugal-shag-engur of Lagash and Mesilim of Kish go back to about 3000, and before them

* Summed up in Prof. Eduard Meyer's recent book *Die ältere Chronologie Babyloniens, Assyriens, und Ägyptens* (1928).

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comes the first dynasty of Ur. So far as Egypt is concerned Prof. Meyer revises his previous conclusions in the light of new evidence, and reduces the date of Menes and the beginning of the first dynasty from about 3400-3315 to 3197 (roughly 3200) B.C. The third dynasty will then have begun about 2778 B.C., the sixth about 2424; and the end of the eighth, at the close of the 955 years which is stated in the Turin Papyrus to have been the sum of the kings of the Old Kingdom, is placed about 2242, leaving 242 years till the beginning of the twelfth dynasty about 2000 B.C., on the authority of the well-known Sothic date for that dynasty. This date is now generally accepted. I have myself suggested that owing to the extremely short period it allows between the end of the twelfth and the beginning of the eighteenth dynasty (c. 1788-1580 B.C.), there may have been a mistake of some kind as to this Sothic date: the calculations of Nicklin⁹ would take it back about 70 years, and if such a discrepancy in the calculations of the astronomers is possible, it is not incredible that the twelfth dynasty may have to be put back even further, but not more than 200 years earlier.¹⁰ I fully accept Prof. Meyer's revised conclusions as to the dates of the Old Kingdom, so that the earliest possible date for Menes may be taken as not 3600 but 3400 B.C., and the latest as 3200. The calculations of Borchardt based on consideration of the Palermo Stone which would take Menes back a thousand years, have been proved erroneous by Peet and Meyer, and Prof. Sir Flinders Petrie's proposal to take back the twelfth dynasty a whole Sothic period (1460 years) earlier, and so bring Menes to about 5000 B.C., is generally regarded as impossible of acceptance. For one thing, it would make nonsense of Cretan archaeology, as well as totally disagreeing with the Babylonian evidence. We cannot settle Egyptian chronology on Egyptian evidence alone; the three archaeologies are so interwoven now that their chronologies have to be considered together, and the two others unite in throwing out Petrie's Egyptian dates. We may then take the date of the first dynasty as about 3400-3200, or equally possibly, if the Sothic date is incontrovertible, about 3200-3000 B.C. That is to say, if Meyer's date is accepted, the first Egyptian dynasty and the first dynasty of Ur were roughly contemporary, and if Mr Woolley's contention is correct—that Ur A goes back to 3500—the oldest and richest graves of Ur, which have yielded such wonderful results, are, if Meyer is

⁹ T. Nicklin, *The Origin of the Egyptian Year* (Classical Review), 1900, pp. 146-8.

¹⁰ H. R. Hall, *Ancient History of the Near East*, p. 25; *Cambr. Anc. Hist.* i, p. 169.

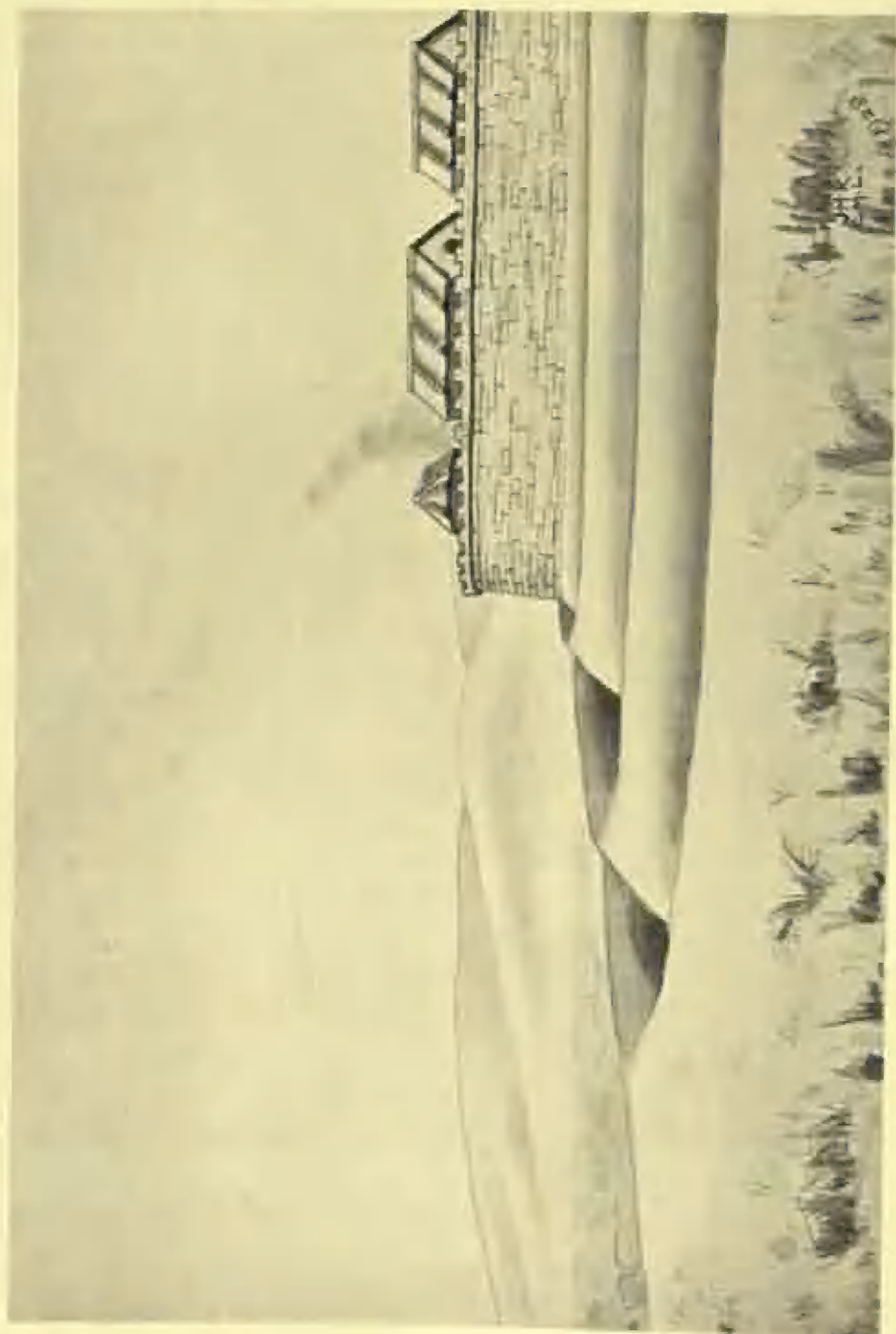
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right, older than, or if my suggestion has anything in it, contemporary with the first Egyptian dynasty.

We have seen that Ur A, with its superior ceramic and metallurgical technique, seems to shew us a culture more highly developed than that of the first Egyptian dynasty, though closely analogous to it. If this impression is justified by the facts, its development must go back further than that of the contemporary Egyptian culture, and it must be the older of the two. Also the fact that the Egyptians of the first dynasty seem to have borrowed certain elements of culture from Babylonia, which afterwards died out in Egypt, goes to confirm the greater age of the imitated culture. The possibility that these elements came to Egypt not direct from Babylonia but from an unknown common source from which Babylonia also took them must not be ignored. So far as the facts go, however, we seem to be confronted by the new Babylonian discoveries with the conclusion that of the two the Sumerian was slightly the older culture, and that Egypt borrowed from it not only the element which we have already noted, but, after the time of the first dynasty, the knowledge of the potter's wheel and the socketing of weapons, which she adopted for the spear but not for the axe.

The bearing of this conclusion on current theories that Egypt was the centre from which all civilization spread over the Orient and the world, is obvious. Our deduction cannot yet be pressed: we need further evidence which we hope will shortly be forthcoming. But that is how the matter stands at the moment of writing (December 1927).

PLATE I



RESTORED VIEW OF NORTH CORNER OF ROMAN FORT AT MALTON

Roman Malton: a Yorkshire Fortress and its neighbourhood*

by PHILIP CORDER and JOHN L. KIRK

EXCEPT for some trenches dug in 1865-6, when the Thirsk and Malton railway was constructed, no systematic excavation of the Roman station at Malton has ever been made until 1927. Although casual Roman finds have been plentiful, few of them have been published and little is definitely known about the site and its history, the current Ordnance Survey map merely marking the Fortress as 'Supposed Roman Camp'. Many of the statements made about it in the past have been purely conjectural. As a result of recent investigations, the writers believe that the time has come when some general statement can profitably be made as to the extent of the site, its importance in Roman times, and the nature of the occupation of the neighbourhood.

Amongst those who have written of the antiquities of Malton in the past, one writer, Rev Dr Young (*History of Whitby*, 1817) shows unusual judgment and penetration in an age when antiquaries were only too ready to repeat the guesses of their predecessors. The exact position and extent of the Malton fort were unknown before 1927, and few finds are recorded before the 19th century, yet Dr Young recognized it as a place of importance and guessed its position correctly. With only a knowledge of the inscribed stone at Ravenhill¹, more than a century

* The writers wish to record their indebtedness to the Editor of the *Malton Messenger* for his courtesy in putting the files of his paper at their disposal; and to the Director-General of the Ordnance Survey for references to the Name Book of the Ordnance Survey.

The following abbreviations are used in the footnotes:—

ONB for Ordnance Survey Name Book.

JRS „ Journal of Roman Studies.

YRAC „ Yorkshire Roman Antiquities Committee.

CIL „ Corpus Inscriptionum Latinarum (Hübner), 1873.

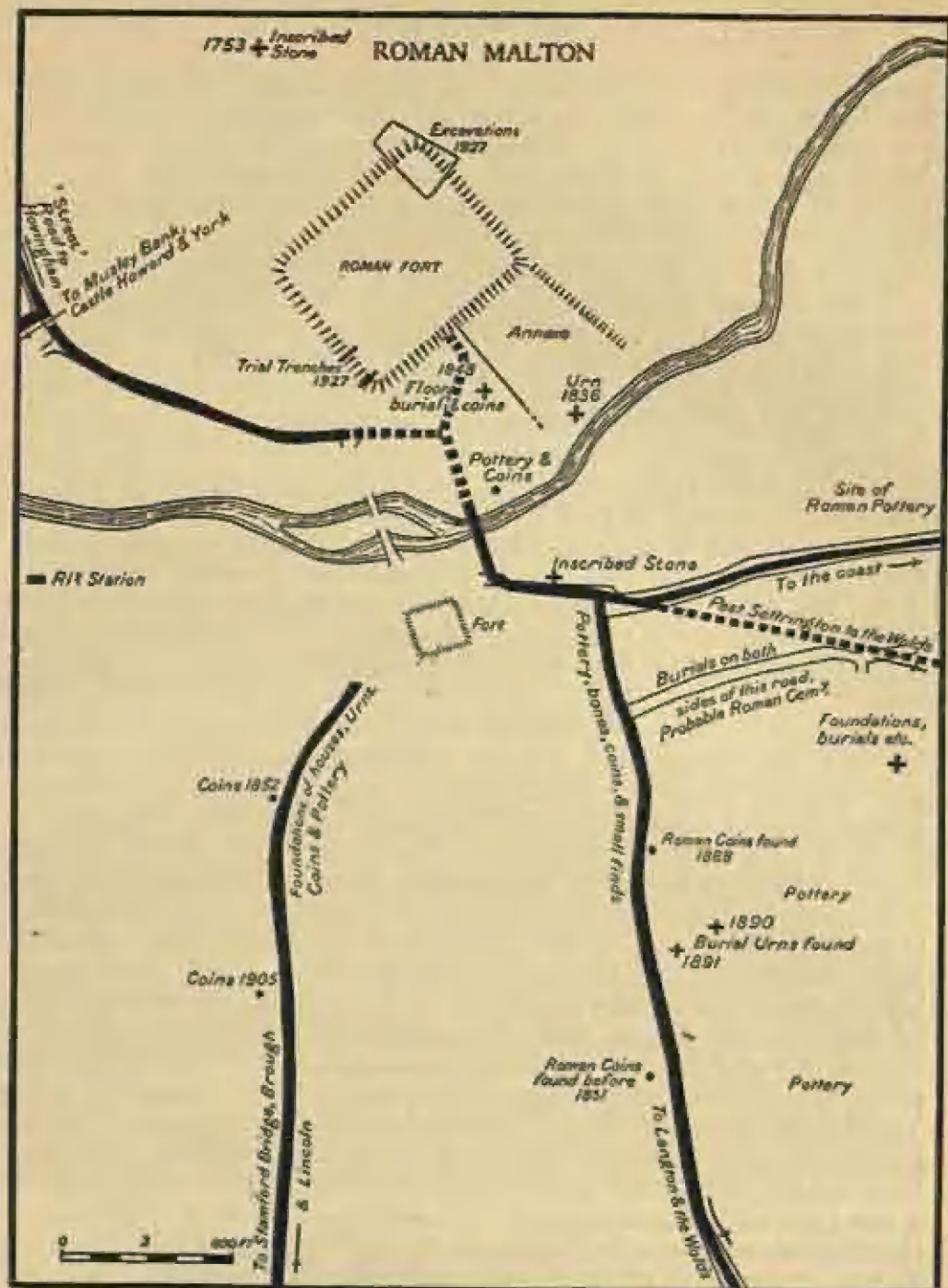
YAJ „ Yorkshire Archaeological Journal.

¹ CIL, vii, 268: JRS, ii, pt. 2, p. 210.

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before the discovery of the signal stations at Huntcliff, Goldsborough, and Scarborough, and forty years before the Roman finds were made at Filey, he wrote : ' Malton was a most suitable place for a large garrison and military depot for supplying and assisting the forts along the coast, having ready communication with Flamborough, Filey, Scarborough, Ravenhill, Whitby, Dunsley, etc., as well as with York, the metropolis of Maxima '. Reference will later be made to his suggestion, in discussing the first Antonine Itinerary, that Malton is *Derwentio* and that this route runs north-eastward from *Eboracum* and terminates at Dunsley Bay.

The Roman fortress at Malton is situated midway between York and the coast on a tongue of land at the north-east termination of the Howardian hills, sloping down into the marshes of the vale of Pickering and having the river Derwent on the south. It was here that the Norman castle was built, which in its turn gave place to a Jacobean mansion, no traces of which remain but the gatehouse, which in its altered form is known as the Lodge. The gardens of the Lodge cover about half the Roman fortress and the levelling of the castle and mansion and the work of subsequent landscape gardeners has obliterated all surface indication of buildings and defences. The north-eastern half of the fort is under pasture land known as the Orchard Field and has for its boundaries the Derwent on the south-east, the modern Malton-Pickering road on the north-west, and the Thirsk railway, which, as the ground falls to the river, emerges from a deep cutting that has destroyed the outer ditch, on to an embankment leading to a bridge over the river. The north-west rampart is about 60 feet above the river, but the ground drops away steadily to the south-east rampart and the annexe which lay between it and the Derwent. The field was levelled in 1800 and the following years, so that the line of the rampart parallel to the road has been obliterated, and only the general direction of the north-eastern and south-eastern defences were discernible when excavation was begun in the north corner in the spring of 1927. Owing to the levelling just mentioned, the surface earth was found to be full of potsherds of all periods and the whole site gives evidence of systematic quarrying, possibly in the Norman period, as hardly a stone of the wall was found in position. The defences inclose an area of not less than eight acres and consisted originally of a clay rampart (plate III) with at least two ditches and possibly more which have been obliterated by the later and deeper ditches. At a later period on the north-east side of the fort, this



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rampart was cut away and faced with a stone wall four to five feet thick. On the north-west front, however, this wall swings out beyond the earlier defences; one of the ditches has been filled in to carry its footings. These consist of stone set in clay to a width of twelve feet. On this side of the fort, where the railway cutting has not destroyed the outer ditches, are two deep v-shaped ditches, cut into the rock, ten feet and fifteen feet in depth. The wall has been a fine structure built of large dressed stone. Intra-vallum roads show evidence of six or seven reconstructions. Excavation inside the corner of the fort suggests at least four reconstructions of the internal structures, starting with buildings of wattle and daub on an earth floor. The next period shows foundations of fine stone buildings which have subsequently been entirely removed and their foundations covered by the later cement floors, and these in their turn have later structures overlying them but unconnected with them (plate II). A circular oven was found backed by the clay rampart at the north corner and the distinct layers of burnt material in connexion with it suggest that, when completely excavated, it will show several reconstructions. An apsidal building of the latest period encroaches on the clay rampart of the north-east defences so that its eastern wall is only ten feet from the outer face of the fortress wall.

Finds of pottery have been plentiful and cover all periods from the first to the fourth century. The most interesting of the latter is part of a vessel decorated with hammer and tongs, a parallel to the famous smith's vase at Colchester, hitherto considered unique. Mr M. R. Hull, who has examined the pottery, reports as follows: 'The pottery found in the fort at Malton ranges from late Flavian times to the late 4th century. The quantity is very large, but the proportion assignable to the period before 300 A.D. is comparatively small, especially in the third century. There is hope that several strata, which all seem to belong to the 4th century, may yield material for the ceramic history of the period'. Up to date 76 coins have been found during the excavations and the writers have in addition an authentic list of 293 more found on or about the site. These extend from Nero to Valentinian I and according to Mr Harold Mattingley and Mr T. W. E. Pearce, of the British Museum, who have kindly examined them, are well distributed over the period of the Roman occupation, with possibly a short gap in the third century. Except for a very small fragment, no inscribed stone has so far been found, but in 1753, in the Pye Pits a short distance north of the fortress, was found the memorial stone of

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Aurelius Macrinus, ex-member of the Emperor's bodyguard at Rome,² presumably a discharged veteran.

Evidences of a Roman civil settlement south of the Derwent on the site of the modern Norton are extensive and conclusive. Drainage operations begun in November 1862, and carried on in subsequent years, revealed the Roman ford opposite the south-east gate of the fortress, several roads branching from it, foundations of buildings, many burials and innumerable small finds. It is difficult to understand why no proper account of such important discoveries was ever published. In making the drainage outfall at a point opposite the modern gasworks at a depth of eight feet, the workmen found a hard concrete mass resembling the best macadamized road. This proved to be a road fifteen feet wide continuing across the river. On it were found coins varying in date from Constantine to William III, at least suggesting that the ford was in use until comparatively modern times. In addition to bones and Roman pottery, were found an iron spear head, a horn handle, a wooden sandal with bronze fastenings, and a quantity of small horse shoes smaller than modern ones and without the groove for the nail head. The road was exposed for some yards towards a small rectangular camp 100 feet square, presumably a Roman post guarding the ford, which is now covered by the houses on the north side of the modern St. Nicholas Street.³

On reaching the modern road the Roman road was traced eastwards in the direction of Scarborough for some 220 yards and was again found further east opposite the old manor house, this time only three feet below the modern surface and composed of broken stone laid in cement on a foundation of boulders. The most interesting discovery made on this side of the river was that of an inscribed stone, apparently from the front of a goldsmith's shop, found in the old church wall 100 yards east of the ford.⁴ Reference is also made by a Mr Monkman in the middle of the last century to his discovery of a Roman pottery on the site of the Primitive Methodist chapel a little further along the road. Just beyond the church, where the modern Wold Road leaves the Scarborough road, was found another Roman road of similar construction running southwards at right angles to the first. Numerous burials were found on

² *CH.*, vii, 264.

³ Map of British and Roman remains, *Arch. Inst.*, 1847.

⁴ *CH.*, vii, 265; *Handbook of York Museum*, pp. 33-4.

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each side of this road in the cellars of the houses and eastwards along Wood street; and Roman pottery is frequently turned up in digging graves in the modern cemetery which lies some way to the east of this road. Another road led south-west from the ford skirting the small fort just mentioned, and was traced as far as St. Nicholas street, which cuts it at right angles. It presumably joined the south road to Stamford Bridge, a coin find having been made in laying the foundations of a house on this line. During similar drainage operations the road was found again on the north side of the ford. It skirted the south corner of the fortress and was found in several places along the line of the modern road through Malton leading to the Street villages and Hovingham. In Castlegate it was a paved road of large blocks of stone set in cement nine to twelve inches thick and between three and four feet below the present surface, the centre, forming a channel, being lower than the sides. A similar road was found, branching off from this in the direction of York along the line of Yorkersgate.

The fortress at Malton is comparable to the legionary fortress of Eboracum itself as a road centre, no fewer than six Roman roads appearing to meet here. The westerly road, still known as the Street, through the villages of Appleton-le-Street⁵ and Barton-le-Street,⁶ keeps almost a straight course to Hovingham, where a considerable villa was found in 1745 with 4th century coins.⁷ At East Ness in the same parish a stone sarcophagus, inscribed by Vindicianus to his wife and two sons, was discovered in 1616.⁸ This name is of uncommon occurrence and may well be that of the officer who built the signal station at the Peak in the 4th century.⁹ After Hovingham the road enters hilly wooded country and its course becomes conjectural; but that it led to Aldborough (Isurium) seems probable. Beside this road at the village of Broughton, on the outskirts of Malton, was a Roman cemetery, where numerous burial urns¹⁰ have been found at various

⁵ Roman pottery 1889 in churchyard s of road (ONB).

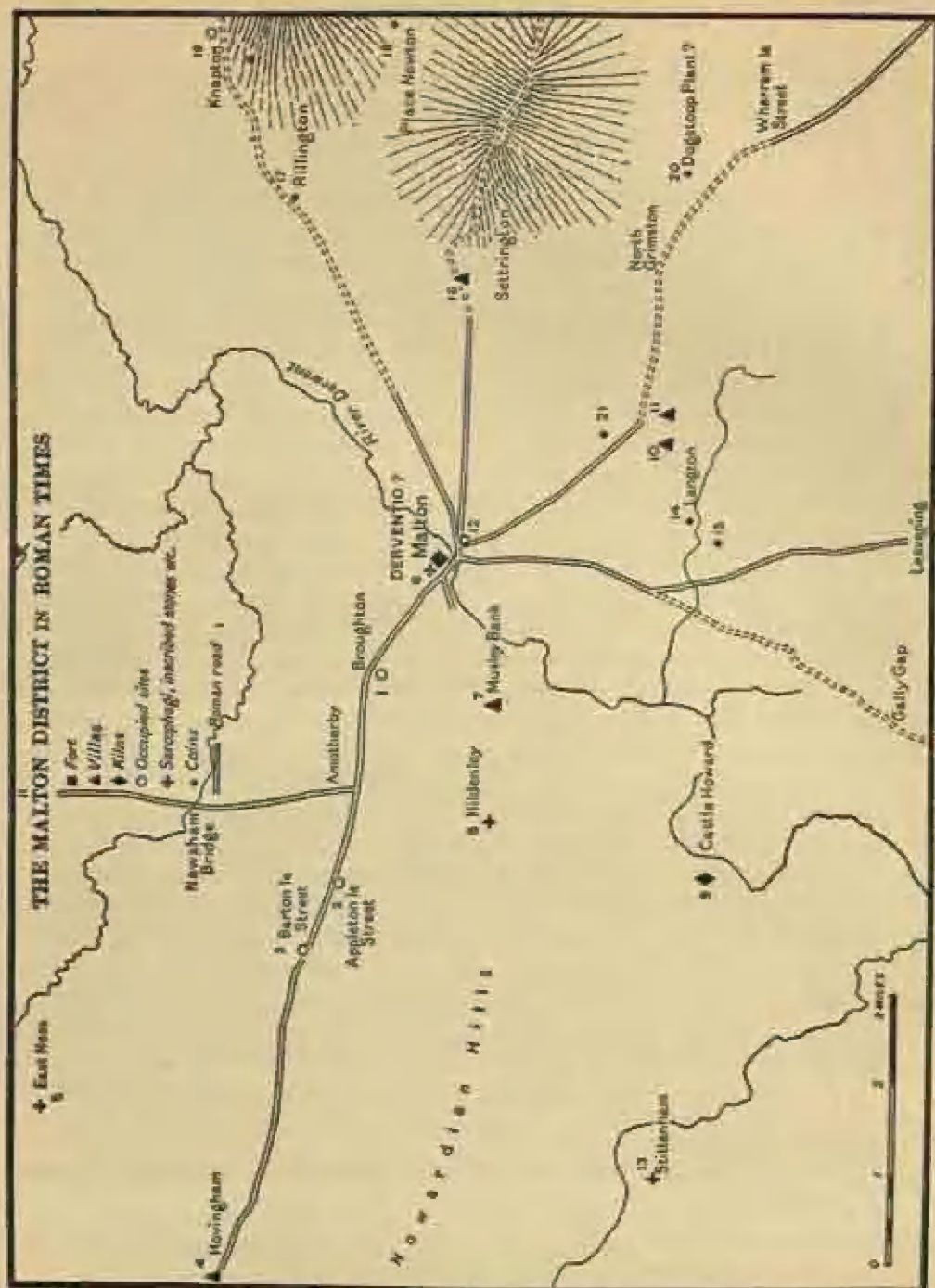
⁶ Roman pottery 1888 in garden N of road (ONB).

⁷ Tessellated pavement; hypocaust; bath 11' by 10' 9"; coins Ant. Pius, M. Aurelius, Constantius and Constantine.

⁸ *CHL*, vii, 266.

⁹ *CHL*, vii, 268; *JRS*, ii, pt. 2, p. 210.

¹⁰ 9 burial urns s of road previous to 1840 (ONB). 11 urns previous to 1798 (*Hinderwell, History of Scarborough* 1798, p. 15).



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periods, containing jewellery, bronze bridle bits, etc. The main south road, probably the chief line of communication with Eboracum, ran from the ford at Norton, keeping to the east¹¹ of the winding valley of the Derwent, as far as Stamford Bridge, just east of which it joins the Garrowby street road from York to Flamborough (probably the Ocellum Promontorium of Ptolemy), which crosses the Derwent at this point. Two and a half miles from Malton a branch of this road is marked on the Ordnance survey maps¹² leading eastwards on to the wolds at Leavening to a height of nearly 800 feet and making for the Flamborough road near Wilton Beacon. That a loop road joined this south road to the Street is possible though not certain.¹³ Certainly a Roman road ran north from the Street near Amotherby crossing the Rye at Newsham Bridge, near which place Drake records a milestone.¹⁴ From here it crossed the low-lying vale of Pickering on a series of holms past Riseborough, where Roman pottery has been found, and reached the Cawthorn Camps. North of here several miles of its course have been exposed by the Office of Works. Its destination appears to be Dunsley Bay (*Dunum Sinus*?) at a point near Sandsend. South-east from the ford at Norton ran a road to North Grimston and Wharram-le-Street past Fimber station,¹⁵ just south of which it joined the York-Flamborough road mentioned above. A road connecting Malton fortress with the coast at Filey and Scarborough most probably led eastwards, approximately on the line of the present road at the foot of the wolds, as Roman finds have been made at several places along its course.¹⁶ At Knapton, north of the present road, several burial urns were found previous to 1832, one of which, complete with lid, 19 inches high, is in the Scarborough museum. We have found numerous 4th century potsherds at this spot, and other indications of a considerable occupation along the line of the road. Thirteen miles from Malton at Sherburn, where the road most probably branched off to Scarborough from the Filey

¹¹ Coins from house foundations w of road.

¹² 6" O.S. map, CXLII, NW; CXLII, SW.

¹³ Warburton's map (1720) referred to by Codrington, *Roman Roads in Britain* (1919).

¹⁴ Drake, *Eboracum* Bk. i, p. 36.

¹⁵ Romano-British cemetery, 20 bodies, pottery, etc. (Mortimer Museum catalogue, 1900).

¹⁶ Knapton; pottery and coins previous to 1846 (ONB). Place Newton; (s of the road) coins and pottery 1889; (ONB). Rillington; a Roman bead. Sherburn; Coins of Severus Alex. and Diocletian (YRAC, *Bulletin* 4, 1927); pottery (1928).

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road, Roman coins have been found and one of the writers has collected pottery over a considerable area. A trench dug here in February produced 4th century potsherds and an occupation level at a depth of two feet.

The country north of the fortress lying between this coast road and the Street must have been too marshy to be traversable in Roman times, as no traces of a road in the Pickering direction have been found. Traces of a road from Norton to Settrington and so to the high wolds are marked on the 6-inch Survey,¹⁷ and have been observed by the writers, though its track follows the line of no modern road and ploughing has removed almost all surface indications of its course. In January last the writers traced this road to the foot of the Wolds, north of Settrington village, where, in a ploughed field, they found fragments of 4th century pottery. A trench dug here in February revealed, at the depth of a little over a foot, a floor of rammed chalk covered with a black layer of burnt material and crossed by two wall footings. Above and on this floor were many potsherds of the 4th century and a coin of Constantine II. A similar floor was uncovered about 50 yards from this, and other trial pits in the same area showed the occupation level and produced similar sherds, which indicates that the settlement was an extensive one. The probable line of the road was traced from here, swinging up the steep escarpment on to a line past Settrington Beacon. A lesser road, well marked by finds,¹⁸ led from Norton to Langton, where two Roman villas have been discovered. The first of these, found in 1863¹⁹ on the middle farm, had a tessellated pavement of chalk, bluish wold shale and brick. The second, on the east farm, was re-discovered in March 1926 by Rev C. V. Collier, F.S.A. The illustration (plate v) shews a small rectangular chamber 7 feet by 5 feet, to the west of which is a larger room with the pillars of the hypocaust five in a row. Here were portions of the pavement still in position, the tesserae being similar to those found on the middle farm in 1863. Fragments of wallplaster shewed a floral design in red, brown, blue and pale yellow. The two coins found were of the 4th century, as was most of the pottery from the site.²⁰

¹⁷ *Gentleman's Magazine*, 1862, ii, 557. See also *Gentleman's Magazine Library*: Romano-British remains (1887) pt. ii, 369-70.

¹⁸ Sepulchral urns near St. Peter's Church 1890-1891, and coins previous to 1851 all close to the road (ONB).

¹⁹ *Malton Gazette*, 3 January 1863.

²⁰ *YRAC Bulletin*, nos. 1 (1926) and 4 (1927).

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Whether a road led direct from Malton to Eboracum on the west of the Derwent cannot be proved. As has been mentioned, a Roman road left the fortress along the line of Yorkersgate and a tessellated pavement, marking presumably a villa site, has been found on this line at Musley Bank,²¹ about a mile and a half from Malton near a point where the modern road makes a right angle bend. The Castle Howard pottery, to be described shortly, lies within a hundred yards of the present main road, and as pottery made here in great quantity in the 4th century has been found at Malton and Eboracum, a direct line of communication seems highly probable.

The most interesting Roman site at present being excavated in the neighbourhood of Malton fort is that of a pottery near the Cram Beck on the Castle Howard estate. This site lies close to the Derwent, five miles sw of Malton on high ground above Castle Howard station, close to an earthwork classed as Roman in the *Victoria County History*. Good clay is abundant here in the Cram Beck, near where it runs into the Derwent. The site seems first to have been recognized as a pottery in the middle of the last century, when traces of kilns were found about three hundred yards from the spot where kilns were located last summer.²² The site was, however, almost completely forgotten and was re-discovered by a boy from Bootham school, York, in 1923. In the earth at the top of the quarry which cuts into the crest of the rising ground about a quarter of a mile from the Cram Beck, he found many fragments of coarse Roman pottery. The site is being systematically explored by one of the writers and some of the older boys from Bootham school. Abundant evidence of the manufacture of pottery is found all over the part of the field adjoining the quarry. Besides hearths and the rough footings of the walls of a shed (in association with one of which was found a little 2nd century Samian ware and a bronze finger ring), four kilns and two burials have been excavated.

The kilns were worked in pairs, stoked from the same stokehole, a roughly circular pit about five feet across, dug below Roman ground level. From this led to each kiln a flue passage, built of undressed slabs of stone set in clay in place of mortar and usually floored with stone. This flue was roofed with slabs of the same material, some of which, in two of the kilns, were found still in position. The

²¹ 1817-1842, ONB.

²² ONB and Sheahan, *York and the North Riding* (1859) ii, 592.

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flues, which were three to four feet in length, led into circular furnaces, in each case clay floored and clay lined. They were evidently circular pits sunk below Roman ground level and plastered with soft clay to a thickness of three or four inches, the first firing converting them into permanent structures. In the best preserved pair of kilns the flue passage, once roofed, has been covered with occupation earth, containing broken sherds and a roughly paved area constructed over it and around the furnace. At this level, about two feet six inches above the furnace floor, a permanent clay platform was built over the furnace perforated with vent holes to admit the passage of the heat. On this was constructed the temporary oven in which the pots were fired. This was rebuilt for each firing of the kiln, and it must have been so constructed as to allow the smoke and flue gases from the furnace to pass through it, for no separate chimney or exhaust passage was built in these kilns as was found in those recently excavated by Mr Heywood Summer in the New Forest. Cutting obliquely across the furnace wall of the first kiln discovered, was found a roughly constructed burial cist about six feet in length, composed of slabs of local limestone and floored with the same material. (Plate iv). The leg bones of the burial and a few small fragments of other bones were in situ, and part of the calvarium was found in the debris filling the adjoining furnace. By the left hip was found a small globular pot, rim diameter $2\frac{1}{4}$ inches, of grey ware and local technique. Less than three feet from the head of this cist was another, more massively constructed of six limestone slabs, with a large slab covering the lower part of it. In this was found the major part of the skeleton. By the left hip lay the base of a large 'vesicular' cooking pot, and by the right temple a small, and we think unique, tumbler-shaped vessel three inches high, ornamented with groovings round the body and concentric circles on the base. It is of well burnished blue-grey ware, similar in material, but not in form, to much of the pottery found on the site. The cists lie 18° and 28.5° E of N respectively. There is little evidence by which these can be dated. They were certainly subsequent to the abandonment of the kilns but a long period need not have elapsed before such structures would be forgotten and covered by the light sandy soil. It seems reasonable to suppose that they are late Romano-British. It may here be noted that two similar burials, together with Roman coins, were found in 1858 near the Cram Beck. The coarse pottery found in very great quantities in the rubbish dumps that lay near these kilns, and indeed all over the site, suggests that they were working from the end

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of the third century until the second half of the fourth. The ware is mostly hard grey or black, often well burnished, but painted platters and mortaria were also made here, as was the calcite-gritted or 'vesicular' ware. Pottery from Castle Howard is found at Malton and the Langton Villa, and it is highly probable that much of the better ware found at the Scarborough signal station was also manufactured here. This flourishing industry of the fourth century lends support to our belief that Malton was an important Roman centre at that period.

A word may here be said about the name of Roman Malton, though this must remain a matter of conjecture until definite proof appears. Early antiquaries were inclined to Camalodunum, on the grounds that Ptolemy mentions a Camalodunum in Brigantian territory in addition to the colonia in Trinobantian territory (Colchester). The first Antonine Iter gives distances between stations from the Wall through Eboracum to Praetorium, the site of which station has never definitely been determined. After Eboracum this Iter gives the distances to Derventio VII miles, thence to Delgovicia XIII miles, and from there to Praetorium XXV miles. After discussing various attempts to trace this route to Brough on Humber, Beverley and Patrington, Dr Young (*History of Whitby*, p. 719) writes as follows:—'Since, then, every line proposed for this Iter is attended with difficulties, why may not we bend it a little further northward, and make it terminate at Dunsley? We have here an undoubted Roman road, proceeding in a direct line from York towards an important part of the coast, in a line on which the Romans had encampments so early as the time of Agricola; a road, not of the slight vicinary kind, but strong and spacious, furnished with bridges both of wood and of stone; and provided not only with good stations at Malton, at Cawthorn, and at Dunsley, where it ends, but with intermediate posts at Barugh and Lease Riggs. Nor are the difficulties in fixing the stations on this line greater than in the lines already noticed. If we read XVII for VII, as the number of miles from York to Derventio, supposing an x to be omitted, it will bring us to New Malton, which is exactly at this distance from the suburbs of York. Now Malton is situated on the Derwent, as well as Stamford Bridge, and it has a far better claim to be Derventio, being an undoubted Roman station of great importance, placed at the intersection of several roads; for here the York and Whitby roads, the Flamborough road and the western road proceeding by Hovingham, have all met; and perhaps others now defaced or undiscovered. Here have been found vast

PLATE II



ROMAN FORT, MALTON: FOURTH-CENTURY WALL AND CEMENT FLOOR
PA. Rec. T. Williams

PLATE III



MALTON FORT: VIEW ALONG NORTH-EAST RAMPART, SHOWING PLATEAU, DITCH,
RETURN AND ANNEXE

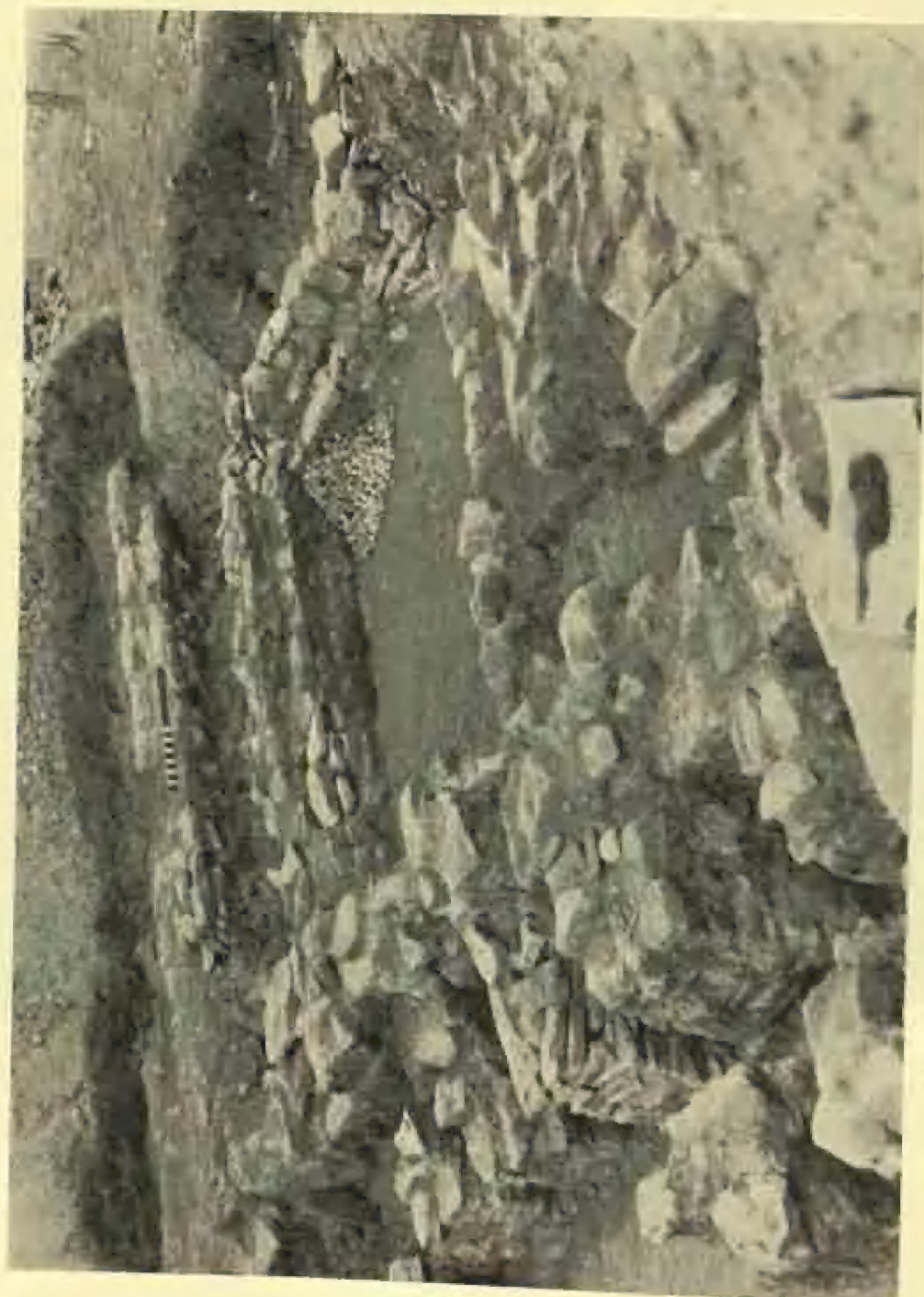
PLATE IV



POTTERY KILN, CASTLE HOWARD, SHOWING BURIAL-CIST IN LEFT BACKGROUND

Ph. P. Corder

PLATE V



LANGTON VILLA: HYPOCAUST, WITH SMALL ROOM SHOWING JUMP OF TESSERAE IN CORNER
PH. J. L. KIRK

ROMAN MALTON

quantities of Roman coins of various Emperors, some as old as Trajan and Hadrian but a greater number of the lower Empire.'

The earthwork at Barugh, although on the line of the road, appears to be of the medieval rather than of the Roman type. Certainly there was a Roman post of some description at Riseborough, marked by pottery finds in the cutting made by the Pickering-Sinnington railway. Since Dr Young wrote this, no evidence for a Roman station of any kind has appeared at Stamford Bridge, though the Eboracum-Flamborough road certainly crosses the Derwent at this point. In support of this unusual northward turn in the route, it must be noted that the country lying east of the Great North road is wild high moorland unmarked by Roman occupation and that there can have been no direct communication from Cataractonum, Isurium or Eboracum to the north-east coast of Yorkshire save by way of Malton. There are difficulties in placing Delgovicia at Cawthorn, as recent excavations have shown no trace of a permanent occupation of that site. The unfinished camp D,²² however, at Cawthorn was clearly intended for a permanent station. The *Notitia* gives particulars of the garrison at Derventio (*praefectus numeri Supervenientium Petuariensium Deventione*). We now know that Malton was strongly held in the later years of the Roman occupation, and Stamford Bridge, did such a fort exist, is too near Eboracum to be usefully garrisoned in the 4th century. Though the name of our Roman fortress must, therefore, remain undecided, the writers are of the opinion that Malton has better claim to be Derventio than any site suggested for it up to the present time.

Enough has now been said to bear out Dr Young's conclusions as to the importance of Malton as a military centre. It has been seen that we have here a large fort of eight acres with unusually imposing defences and an annexe. Moreover around it there is a considerable civil settlement, as evidenced by the goldsmith's shop in Norton and streets and foundations of buildings to the south of the river over the ford. In addition, the immediate neighbourhood of the fortress was sufficiently peaceful for settlements to be built several miles from its protection; the sites of nine of these are known, seven at least of them occupied in the 4th century. Moreover in the neighbourhood a flourishing pottery factory was at work at the same period. The fortress itself, an important road centre as we have seen, was in full occupation

²² YAJ, part 113 (1927).

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at the period of the signal stations along the coast and was in direct communication by road with Flamborough and Filey, Scarborough and Goldsborough. The excavations conducted at York this year by Mr S. N. Miller have shown that at the same period certain of the stone barracks adjoining the defences there were disused, and 4th century pottery within the York defences is scarce. All communication between Eboracum and the signal stations north of Filey must have been by way of Malton ; and as Eboracum is too far from the coast for reinforcements to be quickly moved to any threatened point, it must be concluded that Malton—or may we say Derventio?—was the base from which these signal stations were operated.

Notes and News

ARCHAEOLOGICAL DISCOVERIES IN INDIA

In *The Times* of 4-5 January and *Illustrated London News*, 7 January, Sir John Marshall gave an interesting summary of the last few seasons' work at Mohenjo-Daro and Harappa and the following notes are based upon those articles.

At Mohenjo-Daro in the Indus valley the three latest cities on the site have so far been excavated and these appear to be roughly contemporary with the uppermost cities at Harappa in the Punjab. On this second site, however, the excavations have been carried to a greater depth, and remains of a much earlier type have been recovered. The date of the uppermost cities of Mohenjo-Daro and Harappa can be determined within fairly narrow limits by the discovery in Mesopotamia of typical Indian seals, inscribed with Indian pictographic signs, in positions which leave no doubt that they belonged to the period before Sargon I, that is before about 2700 B.C. Another seal of the same pattern, recently discovered at Ur, is inscribed with cuneiform characters of about 2700 B.C. These seals, therefore, evidently belong to the first half of the 3rd millennium B.C., and since others of the same type are found associated with the three uppermost cities at Mohenjo-Daro it is reasonable to assume that they flourished at or before that period. It is of course more difficult to estimate how long a period was covered by the erection and destruction of these cities. Structurally there are great differences between the buildings of each city and its successor, but, on the other hand, the objects found in the different strata are almost indistinguishable. Sir John Marshall, taking these facts into consideration, provisionally assigns the first city to about 2700 B.C., the second to about 3000 B.C., and the third to about 3300 B.C.

Recent excavation, whilst confirming the previous evidence of a close connexion with the Sumerian civilization of Mesopotamia has also revealed striking differences, and it is proposed to recognize this fact by substituting for the name Indo-Sumerian, formerly given to the newly discovered culture, that of Indus. It is claimed that connexions can also be traced with Seistan, Transcaspia, western

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Persia (in the proto-Elamite period) and even with pre-dynastic Egypt, but it is as yet impossible to form any definite conclusions as to the relations of the Indus civilization with these various regions.

The remains of Mohenjo-Daro are built of well-burned brick usually laid in mud, but occasionally in gypsum mortar, with foundations and infillings of brick. One of the best examples of building is a large bath or tank near what is believed to be the chief temple of the city. It measures 39 by 23 feet, is 8 feet deep and is fed from a well near by, and the water from it was conducted outside the city by a drain (plate 1), which is 6 feet in height with a corbelled roof. The greater number of the buildings, however, are private dwellings which are all well built and supplied with a system of drainage by which sewage was carried by drains into street tanks and thence removed by scavengers. Many of them also have bath-floors which strikingly resemble those in modern Indian houses. The buildings at Harappa are not so well preserved as those of Mohenjo-Daro, but, for the rest, closely resemble them.

Of the race of the inhabitants of these cities it is impossible to say much. Skeletal remains which have been found on the sites are dolichocephalic but appear to belong to a date subsequent to the destruction of the latest city of Mohenjo-Daro. The dead were apparently disposed of in two ways. Traces of cremation have been discovered, also one example of fractional burial, similar to those found at Nal in Baluchistan and Musyan in western Persia.

Of the material civilization it is possible to say more. Agriculture was practised, and specimens of wheat found at Mohenjo-Daro resemble the common variety still grown in the Punjab. Among the domesticated animals were the humped Indian bull, which must have been very plentiful, the buffalo, a short-horned bull, sheep, pigs, two kinds of dog, the horse and the elephant. The wild animals most frequently represented on the seals found, are the tiger, elephant and rhinoceros, which seems to indicate a damper climate than that of the district today. The practice of spinning and weaving is attested by numerous spindle-whorls, and some scraps of fine woven cotton material.

Beside gold and silver the Indus people were familiar with copper, tin and lead. Copper they used freely for weapons, tools, domestic utensils and personal ornaments, and though some pieces of cast copper have been found, it was usually wrought by hammering. Bronze was used mainly for tools requiring a hard cutting-edge and contained

PLATE I



VAULTED DRAIN, MOHENJO DARO, INDIA

PLATE II



SEAL-IMPRESSIONS FROM MOHENJO-DARO, INDIA

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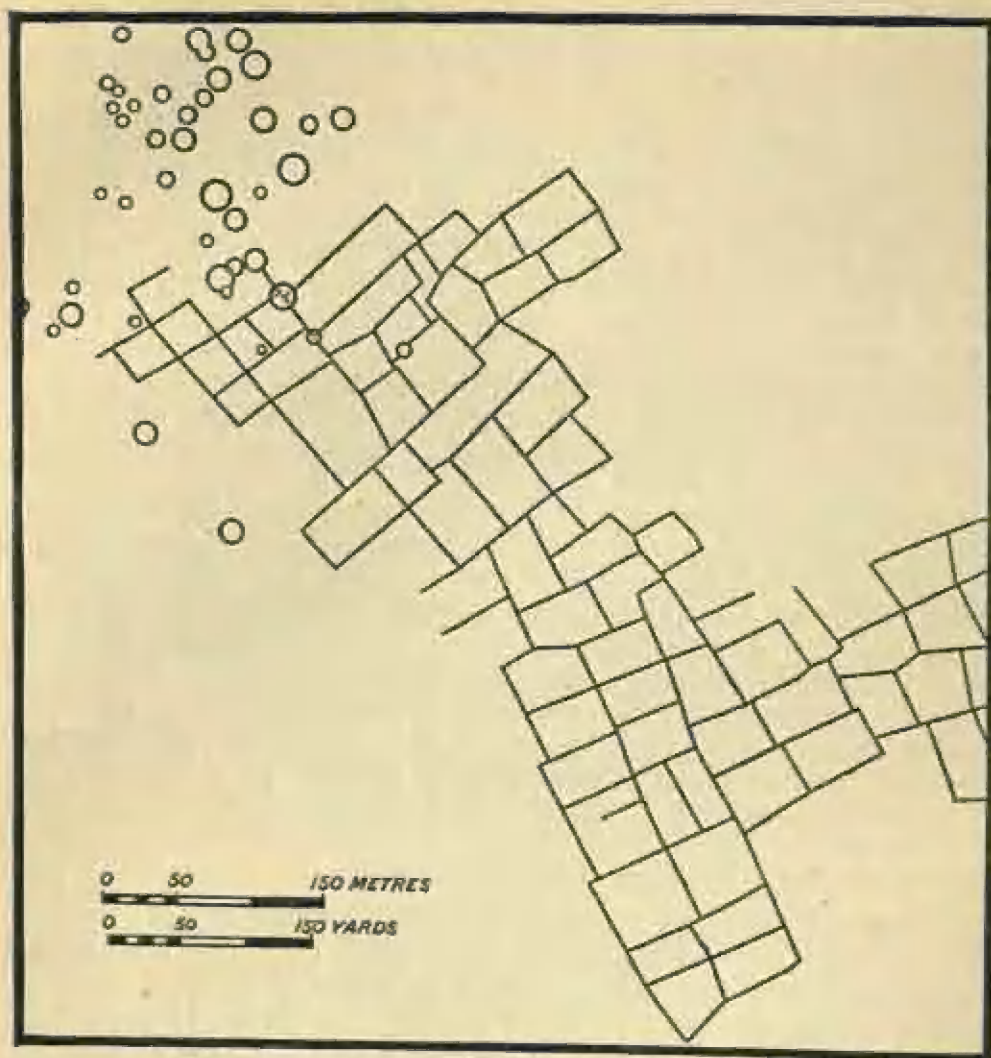
from 6 to 12 per cent. of tin, but tin was evidently rare and the number of bronze objects is comparatively small. At the same time the influence of the Neolithic period persisted and knives made from flakes of chert, stone maces and celts, and stone weights, are all very common. Shells were also used for a variety of purposes, being imported, as in Sumer, from the sea coast. Personal ornaments are very numerous and varied, many being decorated with blue encaustic faience. Pottery was mostly a plain undecorated ware but painted ware is not uncommon. As a rule the designs are painted in black on red slip and this red and black pottery has been found in northern Baluchistan, Waziristan and Seistan. The most typical objects on these sites are the inscribed seals, of which nearly a thousand have been found. Some of these are finely engraved with designs of animals and many are inscribed with pictographic signs which have not been deciphered. A small proportion of these signs are said to resemble early Sumerian pictographs. Some of the engraved seals are illustrated here. (Plate II).

A striking feature of the excavations and one which (it is claimed) argues a very peaceful state of society, is the great scarcity of weapons. Amongst the finds in the earlier levels at Harappa, however, was a large copper vessel containing a mace-head, 2 double-axes, 7 daggers, 2 lance-heads, 16 spear-heads and 21 celts, as well as various copper tools. Another interesting object from these earlier strata is a model in copper of a two-wheeled cart with a gabled roof and a driver seated in front, which is one of the earliest known examples of a wheeled vehicle. Further details will no doubt be given in the monograph on Mohenjo-Daro which is to appear early in the summer.

PREHISTORIC FIELDS IN HOLLAND

Dr van Giffen, Director of the Biologisch-Archaeologisch Instituut of Gröningen University, has recorded the presence of cultivation-plots, resembling our 'Celtic fields', in his country. In a letter to the Editor, he says: 'During the last ten years I have been carrying out archaeological investigations on a heath to the north of Zeyen, in the district of Vries, province of Drenthe. There are about 165 round mounds of the stone, bronze and iron ages, a megalithic tomb, and an area of ancient cultivation. The fields composing the latter (see fig.) are called by some' " Romeinsche legerplaatsen ", or,

¹ John Picardt, *Korte beschrijvingen van eenige vergetene en verborgene antiquiteiten etc.*, 1660, p. 41.



ANCIENT FIELDS AT ZEYEN, HOLLAND
(after plan by Dr van Giffen, by permission)

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better, "heydensche legerplaatsen"; and they are apparently equivalent to the Celtic fields of England. They also occur near Êrnst in the province of Gelderland, where one such area was recently found by Dr J. Butter. It was recognized as such by Baron F.E. van Heerdt and confirmed by me'. Returning to the fields at Zeyen, Dr van Giffen continues: 'Each year I have devoted my attention to some portion of this area; and I hope thus before long to complete my survey of the whole. In two or three places the small walls separating the fields come in contact with a round mound, and in each case I found that the wall underlay the mound. These mounds belonged in every case to the Iron Age—as far as I can make out to the period between the 2nd and 8th centuries A.D., but the objects discovered are difficult to date precisely. On the north side, where there is contact with the mounds, there is clear evidence of tillage. Now under the round mounds one finds the arable land, in the form of narrow fields with field-ditches of the early Iron Age or late Bronze Age. In my opinion these fields (*legerplaatsen*) originated during the La Tène period. In our case they lasted, I suppose, until Roman times, say until the 2nd century A.D. Generally speaking I regard the "legerplaatsen", and "kringgrep-urnen-velden" (urnfields with circular trenches) as contemporary'. Dr van Giffen had already suspected, from the evidence of the associated burial-mounds, that the 'legerplaatsen' might be of Celtic origin, the more so since enquiries of Danish and North German archaeologists failed to elicit any trace of such fields in those countries. Thus the Editor's hypothesis (put forward in his *Air Survey and Archaeology*) that our English prehistoric cultivation-plots were introduced here by 'Celts' is found not to be in disagreement with the Dutch evidence. With Dr van Giffen's kind permission we reproduce here a copy of his plan of part of the cultivation-area at Zeyen. We hope to publish later on an article by Dr van Giffen himself—perhaps two.

CUNEIFORM INSCRIPTIONS IN SYRIA

We are indebted to M. Charles Virolleaud, Director of Antiquities in Syria, for kindly sending us a copy of his preliminary (unpublished) report to the Academy, submitted on 9 September 1927. The following is a summary:—

Some further information is now available about the fragments of Assyrian inscriptions discovered near Mishrife in the region of

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Homs by M. le Comte du Mesnil du Buisson. The fragments were discovered at a depth of about 50 cms. on the pavement of a ruined and burned building, and M. Charles Virolleaud has presented to the Academie des Inscriptions et Belles Lettres a preliminary account of them. The fragments were found to make up 9 tablets, constituting four documents, the first document being represented by four examples, the second by three and the other two by one only. The first of these is entitled *Tablet of the treasure of the goddess Nin-Egal, patroness of the town of Qatna*, the second is entitled *Tablet of the treasure of the King's gods*. The title of the first document is in itself a revelation, since it shows that the building of which M. du Mesnil has excavated the remains was a temple dedicated to a Sumerian goddess, Nin-Egal, whose principal sanctuary was recently discovered by Mr Woolley at Ur. At Ur, however, she was associated with the gods Nin-Gal and Sin, but at Qatna she seems to have taken the chief place, and the treasure of this alien divinity was 7 or 8 times as great as that of all the other gods together. These native gods are described only by the collective title of 'the King's gods'.

This discovery of a Sumerian temple in the heart of Syria is obviously of the greatest interest both from the point of view of history generally, and that side of it which deals with the distribution of cults. Incidentally this document settles an important point of ancient topography by identifying the site of the city of Qatna with the modern Mishrife. The inventory of the treasure of Nin-Egal is in the Accadian tongue, and the writing is of the Cassite epoch, that is to say of the second millennium B.C. There is good reason to suppose that it is earlier than the El Amarna letters in which Qatna is mentioned. (Four of these letters are in fact from Akizzi, a king of Qatna). Half the objects enumerated are of gold, most of the others of lapis-lazuli and other stones. There are none of bronze, copper or silver, and very few of iron. Amongst the names of those who had given gifts to the temple are two, AKI-TESUB and ADDU-NIRARI, which seem to be Mesopotamian. There is also a personage bearing the name LULLU and the exclusively Babylonian title of SAKKANAK. These facts seem to give good evidence that the influence of the Mesopotamian civilizations was not always exercised at a distance, and that Babylon occasionally intervened directly in the affairs of Syria. It may be added that M. du Mesnil found at a distance of 700 metres from the temple at Qatna a fragment of a contract, written, like the inventories, in cuneiform.



PART OF BOARD OF GOLD COINS AND THE HOLLOW FLINT 'MONEY BOX' IN WHICH
THEY WERE FOUND, NEAR WESTERRHAM, KENT
[Natural size]

NOTES AND NEWS

BRITISH GOLD COINS FOUND NEAR WESTERHAM, KENT

Mr E. G. Box has sent us the following particulars as to the circumstances in which this interesting find was made. Workmen digging for gravel on Hosey Common near Westerham on 15 June 1927 found a hollow grey flint containing 14 gold coins. The flint (see plate) was found at a spot where the common has a top layer of three inches of peat, covering a layer of 18 inches of mixed peat, loam and loose chert, below which is red chert. It was in the second of these strata, at about a foot from the surface, that the find was made. This point on Hosey Common lies between the camp in Squerries Park and French Street farm where a coin of Cunobelinus is said to have been found in 1889. The flint, which is about the size of a small cricket ball, has two holes in it, the larger about $\frac{3}{4}$ inch in diameter, and, when discovered, the interior was choked with peat and roots.

Mr G. C. Brooke of the British Museum, who has examined the coins, sends us the following description of them. The coins belong to the latter part of the 2nd century B.C. and were struck off by Celtic tribes either in the north of Gaul or in the south of Britain. The famous gold staters of Philip of Macedon, of which an enormous number were coined, were the prototype of a large native coinage in central and north Gaul and Britain in the 2nd century. In the north, where the coins were distant descendants of the original staters, the design (a laureate head of Philip and a two-horse chariot) is scarcely discernible. The first coin illustrated is of the Bellovaci, a tribe lying to the north-east of Paris; the head (to the left) is an uncouth representation, with the wreathed hair the conspicuous feature, the face itself very small; the chariot has disappeared, leaving one barbarous horse and a few ornaments. No 2, a coin of the Atrebates, a tribe north-west of the Bellovaci, is still more barbarous; the head is hair and wreath only, the horse a series of disjointed curves and pellets. The remaining coins are similar in design to no. 2, but have the stylistic features peculiar to the earliest coins that are found in large numbers in Britain and which have therefore the best claims to being an indigenous British coinage. The head is a stereotyped form with the laurel wreath running down diagonally from right to left, crossed by a fillet circling the head in the opposite direction. The horse, on the reverse, can be made out from studying the various specimens; the head is to the left, the body generally a couple of curves and the legs are like four dumb-bells; owing to the plan of the coin being smaller than the die, in some cases only part of the design shows.

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The use of the hollow flint as a receptacle for the coins is interesting. A similar flint, containing eleven gold coins (Gaulish staters) was found near Rochester in 1912 and another was found last year in Chute Forest, Wilts. In 1839 a hollow sandstone containing 150 pennies of Henry II was unearthed at Amptill, Beds.

STONE MONUMENTS OF BALUCHISTAN

The two illustrations we reproduce here are of considerable interest to European archaeologists. Baluchistan lies on the route from India to the west; and recent discoveries in India have revived an interest in adjacent lands. The photographs were taken in 1915 by Mr V. S. Manley, of Warminster, to whom we are also indebted for the information from which the description has been compiled.

The little burial-circle shown in plate 1 is situated about two miles west of Gulistan, on the plain of Pishin, beside the route to Kandahar, near the Afghan frontier. It surrounds the grave of a man, indicated by the upright stones at the head and foot. (The graves of women have a third stone placed in the middle). The grave mound itself is covered with white felspar. The association of white stones with burials is very common, and has been recorded of the prehistoric Iron Age graves at Harlyn Bay in Cornwall (R. A. Bullen, *Harlyn Bay*, 3rd edn. 1913, p. 34), in a Bronze Age barrow in the Isle of Man, and at the present day in Inverary (*Folklore*, 1893, pp. 13-14). Mr Manley states that the cemetery in which this grave occurs is the only one where he has observed a *grave* surrounded by a circle. Sir Dennis Bray thus describes the other circles which occur in the Brahui country (*Census of India*, 1911, vol. iv, 1913 : Baluchistan, par. 109) :— 'There are everywhere circles of stone called *chap-jahi* or dancing-plots, which mark the sites of frequent dances of some wedding procession'.

The point of the last remark lies, for us, in the association of the circles with dancing and marriage. It recalls the Merry Maidens of Buryan, near Penzance, whose Cornish name means 'dancing stones'. The legend relates that they are maidens who were turned to stone for dancing on Sunday. So, too, the old name of the stone circles at Stanton Drew, in Somerset, was 'the weddings'; and in the North of England stones called 'Bride Stones' are quite common. Do Sir Dennis Bray's words record a fact of modern occurrence, or a legend attached to the stones? In either case the similarity of custom is remarkable, though we must beware of making rash inferences from it.

PLATE 1



MODERN BURIAL CIRCLE NEAR GULISTAN

PLATE II



MINIATURE ZEBU BULL - WITH OFFSPRING OVER GRAVE, NEAR GULISTAN

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The trilithon shown on plate II occurs in the same cemetery. It stands on the grave; and from the lintel, and from one of the upright supports, are suspended the horns of several buffaloes. This is done to invoke the aid of the departed spirit on behalf of the suppliant's buffaloes, which provide him with milk and are an important factor in his domestic economy. In the case of a hunter who desired good hunting, the horns of a markhor (wild buffalo) are similarly offered. Thus over the doorway of the mud-built masjid (mosque) at Sheikh Manda near Quetta, are placed the horns of markhor from the Takatu hills. These denote a hunter's shrine.

It is interesting to find these prehistoric rites still observed, and to learn from them—as we never can from our own remote ancestors—the thoughts and desires which prompted them. We hope later on to publish an account of some even more distant 'megalith-builders' from the pen of one who knows them intimately.

SHIP BURIAL IN THE ISLE OF MAN

Mr P. M. C. Kermode, contributes the following :—

On the highest point of the low range of sandhills which crosses the north of the parish of Andreas, at a height of 182 feet above the sea, and at a distance of a mile due south of Rue Point, stands the mound called Knoc y doonee, recently examined. It makes a notable landmark near the mouth of the Lhen, which was the favourite landing-place of our Celto-Scandinavian settlers in the ninth century.

The diameter of the mound was found to be 51 feet, the height appeared to be about 9 feet, above the level of the field, but more than twelve inches of this was due to the paring of the hill-top for some yards around, whence had been brought the heavy red sand of which it was composed; the plough had helped to reduce the level round the base. The northern face, which had been worn by sheep and weather, showed in section, at a level of two to three feet below the grass, red sand with a layer, 6 to 8 inches thick, of small stones upon which more sand had been heaped to form a worthy monument to the person buried. On the western side were remains of a low retaining-wall which I was unable to trace all round, but loose boulders suggested that it had been carried for some distance across the north face also. From the top of this wall, the layer referred to, of small, tightly-wedged stones, extended to form a compact vaulted roof rising to the centre and protecting the grave and its contents; this roof had been freely sprinkled with broken

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pieces of white quartz—possibly to bind and consolidate the material before it was covered with sand.

A trench from the northern face, 8 feet wide, brought us when within a few feet of the centre to a streak of brown, at a depth from the top of 6 feet 6 inches. Following this NE and SW, I noticed first an iron axe-head of unusual shape, a sword in pieces (evidently by rust and natural decay), with traces of its sheath adhering, and the plain iron boss of a shield. Close by was a socketed iron spear-head and near it some bits of bronze with fragments of a leather strap; the most interesting piece of bronze being a cloak-pin which had apparently been ornamented with enamel. About the middle space was an iron bowl, 15 inches diameter, by 5 inches deep, ornamented by small bosses. This had been covered with canvas; it was now filled with sand and fell to pieces when lifted out. At the south-west end was a hammer with a pair of smith's tongs, and, not far away, the leaden weight of a fishing-line. A Norwegian knife with bone handle was found by the bowl and another with the line-weight. All along this brown layer I noticed a good many boulders which perhaps had been placed under the boat to support it while the sand was being shovelled in; at the SW end several of these boulders had been piled into a little heap, 15 inches high and 20 inches diameter, possibly marking the position of her stern at 8 to 9 feet west of the centre. My reason for suggesting a Boat Burial, which is a type not hitherto met with in the Isle of Man, is that scattered throughout the brown layer, were iron bolts, many with remains of wood attached, of a size suitable for a boat, and there seems to be no other explanation for their presence and distribution. They were in no definite order, but I noted the furthest points NE and SW of the centre where they were met with, suggesting the length of the boat as about 30 feet, and in width I traced them for about 6 feet, while the fact that the first I saw were immediately under the vaulted roof would allow for a vessel about 3 feet high.

No trace of human bone was met with, but compact flakes of black, fine and soft powder must represent decayed animal matter as distinct from the paler traces of decayed wood and fibre. At the NE end however, in a position which seems to have been just outside their prow, on the starboard, some greatly decayed fragments of large bone were found, including the lower jaw of a horse as well as some bits of its harness. On the same level as all these finds, at a point 12 feet NW of the centre, was a patch, about 15 inches diameter, of

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flakes of dark, soft matter, with a few small boulders intentionally arranged.

No trace of a secondary burial was found, and the place, period and conditions seem to be in keeping with the view that at Knoc y doonoe we have one of the latest heathen burials in the Island.

ETRUSCAN CONGRESS

A permanent committee for the study of the antiquities of Etruria has recently been established in Florence, and its activities have already borne considerable fruit. An important Italian congress of Etruscan studies was held in Florence in 1926, and it is to be followed by an international congress at the end of April of the present year, beginning in Florence on the 27th of that month, and closing at Bologna on the 3rd of May, after a visit to the Etruscan city of Marzabotto. The British representatives on the International Committee are Dr Thomas Ashby, Mr Bernard Ashmole, Professor R. S. Conway and Dr David Randall-MacIver; the last-named is to open a discussion on the archaeological material of Etruria proper in relation to that of the other regions of Italy during the Villanovan period; while Dr Ashby is to read a paper on the Roman road system in southern Etruria in relation to that of the Etruscan period. The Congress will certainly be one of great interest, and numerous scholars of all nations will take an active part in it. We therefore venture to call the attention of readers of *ANTIQUITY* to the opportunity which it offers of visiting Florence under the most favourable auspices. Full information can be obtained from the Segreteria Generale del Congresso Internazionale Etrusco, via Ginori 13, Florence, Italy, who will forward particulars in regard to hotels, special railway fares, etc. The membership fee is 36 lire (8s.), and members have free admission to museums, etc., in Florence.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

A bronze arrowhead inscribed with Phoenician characters has been found in a burial-cave at Roueisseh, in French Syria. The tomb had been plundered, and there was no means of dating the arrowhead except by comparative methods. Father Ronzevalle attributes it to the 12th or 13th century B.C. and translates the inscription 'arrow of AD[Ð]ô, son of AKKI'. MM. Dussaud and Virolleaud date it, however, to the 10th century. (*Mélanges de l'Université Saint Joseph*, [Beyrouth], xi, 1926; reviewed by M. Dussaud, and illustration reproduced, in *Syria*, viii, part 2, 1927, pp. 185-6).



The gun-flint industry of a district in Berry (France) is described by M. Schleicher in the *Bull. de la Soc. préh. française* (xxiv, October 1927). After 200 years of activity it is now almost extinct. A bibliography of the subject, by the same writer, appeared in *L'Homme Préhistorique* for May-June 1927.



The reported discovery of the tomb of Genghis Khan proves to have been a hoax. It deceived no one but the Editor of a certain newspaper.



M. Dussaud has published a learned dissertation on Syria and Palestine about 2000 B.C. It is concerned with some names of places, peoples and rulers found in Egypt, inscribed on vases of the 11th dynasty (2160-2000, Breasted-Meyer). These throw much light on the geography and political conditions of the time, and on some Old

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Testament names. The close resemblance of some of the personal names to others known to be contemporary with the 1st dynasty of Babylon (2169-1869 B.C., Langdon-Fotheringham) is evidence in support of the shorter chronology for Egypt. (*Syria*, viii, part 3, 1927, pp. 216-33).

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In the current number of the *Journal of Hellenic Studies* (xlvii, part 2, 1927, pp. 234-63) is a very full report on archaeological work carried out in Greece and the Aegean during 1926 and 1927. It is compiled from first-hand sources by Mr A. M. Woodward, Director of the British School at Athens, and is too lengthy and too compressed to summarize. No less than thirty different undertakings are dealt with.

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The Royal Commission on Ancient and Historical Monuments and Constructions of Scotland has recently completed its survey of the Outer Hebrides, Skye and the smaller islands. The district is remote and inaccessible, but possesses many important archaeological remains. We feel sure that the Commission's Inventory, announced by H.M. Stationery Office, will fully live up to the high reputation secured by previous volumes.

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Mr J. D. Rockefeller, junior, has offered £400,000 for the purpose of building and endowing a Museum of Palestinian Archaeology in Jerusalem. The offer has been accepted. The gift is a generous one ; we hope that the building will be specially designed as a museum, and not as an architect's advertisement.

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The Swedish Archaeological Expedition has excavated 44 tombs in Cyprus of the period 3000-1600 B.C. We hope to publish fuller information later. (*Dernières Nouvelles*, Brussels, 10 November 1927).

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In a letter to *Nature* (17 December 1927, p. 874) Mr M. R. Drennan, of Cape Town University, gives reasons for a new estimate of the cranial capacity of the Piltdown skull. His calculations give 1415 c.c., or some figure between 1346 c.c. and 1484 c.c.

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On page 352 of Vol. 1 of ANTIQUITY we referred, in a footnote, to fishing implements used today in Africa. This needs correction. The implements in question are of iron, not stone, though they are referred by M. Laforgue to *prototypes* in flint.



An expedition is being sent by Yale University to continue the excavation of Dura (Salihyah) on the Euphrates above Baghdad. It will be under the direction of Professor Rostovtzeff, and we understand that Professor Cumont, who has already dug there, may also join the party. (*The Times*, 18 January 1928). For previous excavations there see *Fouilles de Doura-Europos*, 1922-3, Paris, 1926 (P. Geuthner).



New excavations are to be undertaken at Solutré. (*Le Matin*, 10 January).



An Italian expedition, directed by Professor Guidi, has been excavating the acropolis of Amman in Transjordan. (*Il Lavoro d'Italia*, Rome, 29 December 1927).



Eighteen cinerary urns have been found in a mound at Landford, Wilts. They belong to the transitional period between the Bronze and Iron Ages. (*The Times*, 15 December 1927).



An Iron Age pottery site has been found at La Panne on the Belgian coast, midway between Dunkirk and Nieuport. It is being excavated by the Musées royaux du Cinquantenaire. (*Nation Belge*, Brussels, 7 January 1928).



The mound of Kouyunjik at Nineveh is being excavated by the British Museum. The work is being directed by Dr R. Campbell Thompson who contributed an account to *The Times* of what has already been done and what he and his assistant, Mr R. W. Hutchinson,

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propose to do. Financial assistance is being given by the Percy Sladen Memorial Fund and by Merton College, Oxford. (Dr R. Campbell Thompson in *The Times*, 28 December 1927).



A correspondent, who evidently writes with knowledge and authority, contributed a critical account of Woodhenge to *The Times* (28 December 1927), traversing some of the conclusions put forward by the excavators.



Dr Ashby's annual reports on 'Recent Excavations in Italy' were published in *The Times Literary Supplement* (15, 22, 29 December 1927).



Eighteen fragments of fossil men and apes have been found by Dr Wilhelm Freudenberg in pleistocene sand-pits near Heidelberg. His discoveries would appear to be of the first importance, but they have not yet been published. (*Nature*, 31 December 1927).



The excavations at Harlow in Essex (see *ANTIQUITY*, i, 365-6) have revealed a small Roman Temple (*Illustrated London News*, 31 December 1927). Another Roman temple at Worth, near Sandwich, Kent, has been excavated by Mr W. G. Klein, F.S.A. Beneath it were pits containing pottery of the early Iron Age. (*Antiquaries' Journal*, viii, 76-86).



The wall-paintings at Iram, Rhodesia (reproduced in *ANTIQUITY*, i, facing p. 226) are illustrated (with others), and discussed by Miss Margaret Taylor in the *Illustrated London News* (10 December 1927).

Reviews

EARLY LIFE IN THE WEST. By J. A. DAVIES. Clifton: Baker and Son. 1927. pp. 45 and 22 illustrations. 1s.

This brochure is a reprint of articles which appeared in the *Western Daily Press*, and therefore we can presume that it is intended primarily for the general public. The general public, however, will not benefit from it so much as the serious archaeologist, who will find in it many very valuable data—the results principally of the thorough and scientific work carried out by the Spelaeological Society of the University of Bristol. It is difficult to compress into so small a book such a wide range of subject (Early Palaeolithic to Romano-British), and the author's style does not make easy reading. There are many errors of syntax and several mis-spellings. Some sentences have to be read over twice before their meaning is clear. Apparently the original newspaper articles have not been revised. If the author had rewritten them and had given us a clear connected catalogue of the multitude of important facts connected with the Mendip region that he has at his disposal, and had omitted his generalizations, with many of which it is necessary to disagree, the result would have been a book of very great archaeological interest. The illustrations are good, but the titles of them are in most instances quite inadequate, and the references to them in the text require revision. For example we can find no description or details of the vessel depicted in fig. 11, no. 3, and if we follow the text the pottery bowl illustrated in fig. 21 is one of the 'fine examples of smith's work'. We cannot agree that the people who brought over the leaf-shaped swords were 'attracted by Irish gold', nor that they 'reclaimed the valleys for agriculture', nor that at All Cannings 'the manifold details of new culture were introduced by traders' as distinct from invaders *en masse*. Again, we must disagree with the implication on page 29 that the peoples of the middle Bronze Age never buried their cinerary urns in cists in barrows. The author is apparently a disciple of the 'diffusionist' school.

Having laid stress on its faults, it behoves us to praise the merits of this book. In it the archaeologist will find many very valuable facts connected with an interesting region of which Mr Davies has an extensive knowledge.

R. C. C. CLAY.

THE CENTRE OF ANCIENT CIVILIZATION. By H. D. DAUNT. The Bodley Head. 1926. 10s. 6d.

As a rule the dust-cover of a book is a nuisance; but sometimes, as in the present case, it serves a useful purpose. 'This book is a new interpretation of cuneiform inscriptions and ancient traditions, which transfers to the Middle East the early empire of Sumer and Accad, places the Garden of Eden and the Jerusalem of King David in Manipur, and identifies Moses the Hebrew with Sargon of Agade and Siva of India'. When a man reads that, and instead of taking it as a plain danger-signal proceeds to lay out half-a-guinea on the work thus described, at least he does so with his eyes open.

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He will become possessed of a neat-looking volume of 280 pages, well printed, well turned out, but otherwise without a single redeeming feature in it from beginning to end. We do not enjoy having to say such things; authors, like other men, have their feelings, and these should be respected; but anyone who brings out such a book at such a price is simply asking for trouble.

How does the author set about proving his thesis? Let him speak for himself. 'The names of men, cities, and countries occurring in the Old Testament are a curious medley of many languages; Accadian and Sanscrit words abound, the Hindu word for "very great", *maha*, occurs in such forms as Mahanaim, Mahalath, and Mahalaleel' (p. 49). [Someone else once argued by similar philology that the Maccabees were a Scottish Highland clan]. 'Sanscrit changes a primitive initial *i* into *s*, therefore the Su people of Assyrian times would have been the Iu people of primitive times, and the Egyptians even mention the Iuu together with the Lushai in connection with other races of the East. A people called Lushai now live south of Manipur, so the Iuu may be placed in the neighbourhood. From these indications the Su, Suya, or Sukhu of the Assyrians and the Iuu of the Egyptians may be identified with the people whose English name is spelt phonetically Jews, and these are sometimes called Sukees. Many Jews are rather tongue-tied, and lisp in their speech, pronouncing their great prophet's name Motheth; this peculiarity they share with the Burmese, as a glance over a map of Burmah will show, so there must have been considerable mingling of blood' (pp. 75, 76). 'In the East a comb is the symbol for a woman, and the word may perhaps have been coined from coimba, the seat of a goddess' (p. 107). 'The Celtic race represented so largely over Central Europe derived their name probably from *Khel*, the Indian term for a tribe, the Etruscans of early Italian times, from whose country so many of the ablest Italians have come, appear from their monuments to have had the oblique almond eye of the Far East, the Goths bore a name which I believe to be identical with that of the Hittites, and the Gods of the Anglo-Saxon and Scandinavian races will be identified with the Kings of Sumer and Accad' (p. 159: the punctuation is the author's). 'Another title given to the king was *Al* or *Ao* contracted generally into *Ah*. . . . In Persian names of kings it occurs in the form *Kai*, which was corrupted into *Kava*. . . . so it may be recognized perhaps in our term for an old man, *gaffer*' (pp. 166-7). 'The episode of Esther daughter [*sic*] of Mordecai supplanting Vashti at the Persian Court would appear to identify Moses [*sic*] with Merodach and Esther with Ishtar and the Ten Commandments, the Tirash of Sargon, the inscribed stone' (pp. 205-6). 'The name of Moses may be a cognate of *Mosus*, a calf, and the golden calf erected by Aaron may have been intended to represent the absent Moses. . . . but the word *mo* is the Turkish term for the first personal pronoun / [it isn't] so the original name may have been Moshî the I man, or Musa the great I or I am' (p. 210).

On p. 254 we learn that the Hebrew prophet Samuel is to be identified with Hammurabi; he with a personage called Bel Pilipsau in Accadian records; and he, in his turn, with Pelops. We remember that Pelops was cut up and boiled: but it appears that there is a Chinese word *mien*, which is so complaisant as to signify 'to cut up and boil' and also 'to depose'. Therefore the gruesome story of the fate of Pelops merely means that Saul deposed Samuel, once 'the great Hebrew king of sober history'. [The author evidently uses an edition of the Old Testament differing in some respects from the copy on the reviewer's shelves]. Next we learn that Samuel may also be identified with 'Jared or Ehud' the deliverer who assassinated Eglon

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king of Moab. Yet more startling deductions follow from this; for Eglon was a very fat man, and 'the statues of Shoden in Japan are made always very fat, and so would help to identify Din of Egypt with Eglon king of Moab, therefore Samuel must have assassinated Godama Budha' (p. 257).

A book like this is an object-lesson in the advantages of a press censorship. If no book could appear without the *nihil obstat* of some responsible body, what a deplorable waste of time, money, energy, and material would be saved! Seriously to attempt to discern what it is driving at would be to risk the disastrous effects which, we are told, come from grappling with the problems of Greek mythology. On p. 185 our author warns us: 'The Greek stories of the gods are very numerous, and many of them are duplicate stories hidden under their different aliases; however it is not advisable to attempt to identify all the Greek gods and heroes, if one wishes to retain his mental balance, for grandfathers, fathers, and sons exchange their relative positions like in a general post'. Too true!

R. A. S. MACALISTER.

AN INTRODUCTION TO ANTHROPOLOGY. By WILSON D. WALLIS, Professor of Anthropology, University of Minnesota. Harper. 1927. pp. xvi, 520, 33 figs.

It is remarkable that Tylor's famous textbook of anthropology, published half a century ago, has had no successor in English until the appearance of the present work. For, though Professor Wallis has modestly entitled his book 'An Introduction', it is in plan much more—a textbook of the whole science. A reviewer is thus absolved from comparison with the sketchy work of James, with Marett's brilliantly written book in the Home University series, or with the very able and stimulating work of Kroeber.

Following an introduction by Professor H. S. Chapin, the author defines the scope of anthropology. The first part deals with man's kinship, his place of origin, and the physical types of mankind; part II with ancient man. Part III contains chapters on economic and industrial activities—environment and culture, fishing, hunting, domestication of animals, agriculture, transportation, trade, money and finance, foods and—more picturesque than relative topics—'Drinking, Smoking, and Chewing'. Science, magic, and religion are discussed under the subjects of man and the animals, nature and natural phenomena, botany, geography, psychology, time divisions and the calendar, amulets and charms. Part VI deals with social morphology and structure: ethics, opinion, kin and kinship terms, social organization, status of the child, position of woman, birth, marriage and death rites, language, mythology, decorative art, culture and culture areas, diffusion of culture, and 'Varied Achievements of Mankind'.

The structure of the work, as thus indicated, is soundness itself. It represents, as might be expected from the progress of the science of anthropology during fifty years, a considerable advance. Especially commendable is the inclusion of archaeological material as an essential, indeed basic, part of the science. Equally important in such a book is soundness of judgment in developing the plan, and in handling the great and varied accumulation of facts, so that on the one hand inexactness in detail and on the other too great generality find no place. Tylor had such judgment in supreme degree. Here his successor falls short. Some examples may be quoted to demonstrate the weakness. In dealing with the early migrations of peoples

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(p. 39) he characterizes Great Britain as follows:—'In Great Britain a long-headed people were driven out by Shortheads. Celts were displaced by Romans; both were dispossessed by Saxons, Angles, Danes, and Jutes'. Apart from the glaring inaccuracy of the first sentence, the whole statement is hopelessly inadequate. Africa and Polynesia are described in three sentences so general that they leave no impression at all. On page 42 the author states that Mediterranean man is characteristic of the Balkans. On page 145 he states:—'Previous to contact with Europeans the Maoris were not agriculturists'. The domestication of the horse is described (p. 130) in two sentences: 'Probably the horse was domesticated in or near Mesopotamia, whence it was taken to Egypt, Asia Minor, and Greece. It was used by the Britains (*sic*) when their island was invaded by the Romans'. The accuracy of this passage is not above reproach and as an account of the domestication of the horse it is ludicrous. In describing the preparation and fertilization of the soil Maori methods are compressed into a sentence (p. 151): 'In New Zealand the soil was prepared by mixing light soil with heavier, to make the ground more suitable for the yam'. The statement here, which conflicts with an earlier one already quoted, is surely insufficient to describe a system involving three genera of food plants of which the yam was in fact by far the least important. The list of passages open to criticism of this kind might be indefinitely prolonged.

Turning to general questions of method, in dealing with archaeology a teacher is under pressing obligation to warn students of the lack of evidence on many points. Statements that fire was first used in the Mousterian, that copper, bronze, and iron were all known earlier in China than in India and earlier in Chaldea and Egypt than in 'Asia Minor and the Orient', require but do not receive serious qualification. It is rash thus to put forward the suggestion (p. 77) that the Chellean hollow scraper was used 'for scraping rounded objects, such as arrow shafts', that the pre-Chellean falls in the second Interglacial (p. 77), or that the Neolithic was shorter than the Iron Age (p. 90).

A word must also be said about the illustrations. If racial types are to be figured, are not half-tone blocks preferable to line blocks? And is it not important in a text-book intended for students of anthropology to acknowledge the sources from which illustrations are taken?

But in spite of these blemishes the work does represent a considerable achievement. It is a courageous attempt to compress the mass of material collected by ethnographers since the science of anthropology began. To Professor Wallis who has made the attempt full credit is due not only for courage but also for the ability to lay down a sound plan and industry in working through the immense literature. Such a book is greatly needed: it would be supplied by a new issue of the present work carefully edited.

H. D. SKINNER.

THE PRINTED MAPS IN THE ATLASES OF GREAT BRITAIN AND IRELAND. A Bibliography, 1579-1870. By THOMAS CHUBB (late of the Map Room, British Museum); with an introduction by F. P. SPRENT (of the Map Room, British Museum); and Biographical Notes on the Map Makers, Engravers and Publishers by T. CHUBB, assisted by J. W. SKELLS and H. BEHARRELL. The Homeland Association, Ltd., 37 and 38 Maiden Lane, Covent Garden, London (W. 2). 50s.

A well-known archaeologist once said that 'old maps' were of no value to the

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archaeologist. He probably meant, to the student of prehistoric earthworks, or to those who are called field-archaeologists; but the disclaimer, even thus qualified, was unjustified. It is true that, when Camden caused the word 'Belgae' to be inserted on Speed's copy—for it is no more—of Saxton's map of Somerset, we are not greatly enlightened; for we can consult Camden's sources—Caesar and Ptolemy—with equal profit for ourselves, and, unlike Camden, we now have the aid of scientific archaeology to check the written word. But in multitudinous matters of local topography, an old map, if it is on a large enough scale, is an invaluable asset, for it marks a stage in our backward march from the known present to the unknown past.

Mr. Chubb and all those who have been associated with him (not forgetting printer and publisher) in the production of this splendid book deserve the congratulations and gratitude of students of British topography. It is an almost perfect example of that accuracy, thoroughness and learning which distinguishes the British Museum authorities. It is a life's work; and a reviewer feels that there is really nothing left for him to do but commend it in the highest terms to his readers.

The appearance of a bibliography such as this, however, presents an opportunity for discussing its subject-matter. The book under review makes no claim to deal critically with such a subject as the evolution of cartography within its selected range of time; though Mr. Sprent's introduction does provide a historical outline of the subject. The construction of maps and plans is a form of art—or perhaps, since the emotional appeal is absent, we should rather say a craft. It represents an attempt to communicate information from one person to others; and it involves a struggle with material, culminating in a mastery of that material. The early efforts are crude; skill is rapidly attained; but after a brief flowering period, decline sets in, and continues until the art is born again as the offspring of a new material. The same problem may recur, but it is set in a different form each time. The problem of the British map makers was to reproduce an accurate yet attractive map of the British Isles by means of engraving. Many aesthetically pleasing maps appeared during the 16th and 17th centuries (though we must except the pseudo-classical title-pages). But they were none of them accurate, and it was not until the appearance of the first, engraved, edition of six-inch Ordnance maps in 1833 that the peak of achievement was attained. In them beauty of draughtsmanship was combined with accuracy of detail in a manner which has never been surpassed. For three centuries the surveyor had striven for greater and greater accuracy, and the engraver to do justice to his results. For fifty years both succeeded; and the results are those plans which can often be bought for a mere song at a second-hand bookstall. By a curious coincidence, a new process was invented just when the one had triumphed. The future of cartography lies with penmanship and photography (not forgetting air-photography); but we are still, for the most part, producing maps in the old style—an engraver's style. Are we biased, or may we see in some archaeological plans, such as those referred to in the June number of *ANTIQUITY* (pp. 235-238), the heralds of a new and living *penman's* style, consciously designed for direct mechanical reproduction?

The materials upon which to base a philosophy of maps exist in the British Museum, where all those referred to in the bibliography (with a few exceptions, indicated) are to be found. And since it is a reviewer's duty to pick holes, and there is so little scope in the contents of the book, he must perforce look outside it: Mr. Chubb deliberately confines himself to *printed* maps published in *atlases*. No doubt this was right and necessary, but we regret it. We wish that he had included some of those printed maps

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(also in the British Museum) which appeared separately. The scope of the book also prevents mention of Isaac Taylor, whose maps of Hampshire, Dorset and Herefordshire, on the one inch-scale, are so valuable for the field archaeologist. Isaac Taylor seems to have been the first systematically to mark ancient earthworks, such as camps and barrows, upon his maps; many have since disappeared but, thanks to him, they may still be recovered or authenticated, either on the ground or on air-photographs. His maps, and those of Greenwood, Rocque, Norden and others occupy an important position in the history of British cartography. Some of these maps were certainly used in the field by the first Ordnance surveyors, and influenced the style of the first one-inch Ordnance maps. (The actual copies of some of them, well-thumbed, are still in existence).

Then, again, no study of the evolution of the art can be made without reference to manuscript plans, for of course the bulk of the plans made before 1800 were never printed, nor were they drawn for that purpose. No doubt these plans are far beyond the scope of a book like the present, which is a book of reference, not a manual on the history of the subject. Yet we feel that books about both classes are badly needed. A bibliography of the *principal* loose printed maps—most of them county maps—would be invaluable. So too would be a study—it could not take the form of a complete list—of these manuscript plans, often on a scale as large as 1:3168, of which copies are to be found in the British Museum, the Public Record Office, and in the offices of most large country estates. A set of large photographic prints of over a hundred of these is bound up in the Library of the Ordnance Survey, and duplicates have been deposited in the British Museum. A separate catalogue of the manuscript maps in the British Museum and Public Record Office would be of the greatest use; and, to judge from letters received, would be appreciated by the general public. The value of such maps to the field archaeologist and to the student of place-names, land boundaries and perambulations, is very great, though as yet insufficiently realized.

SENNACHERIB'S INVASION OF PALESTINE. A Critical Source Study. By
LEO L. HONOR, PH.D. New York: Columbia University Press. 1926. pp. 122.
\$1 75.

The author of this study states in his foreword that he chose Sennacherib's campaign in Palestine because there has been, of late, practically no new material discovered which throws light on the subject. 'Consequently, all the differences in the reconstruction of the story of that event must be attributed to differences in interpretation, and the analysis of the bases for these differences will help to illustrate the different schools of thought engaged in the reconstruction of the Biblical story'.

The plan of the book comprises general description of the Assyrian sources, which is followed by an analysis of the accounts therein found; then we have a description and analysis of the Biblical version of the campaign, as given in II Kings and II Chronicles. The third chapter is devoted to the Prophecies of Isaiah. Each chapter is followed by a list of references, and there is a bibliography. In the second chapter the author includes the description by Herodotus of an Egyptian legend of how Sennacherib marched a large army against Egypt, and how field-mice devoured the bows and handles of the shields of the Assyrian soldiers, so that when they came to fight they were weaponless.

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Those who have not studied the matter carefully would perhaps have thought that this campaign of about 701 B.C., one of the landmarks, so to speak, of history, referred to in considerable detail in three books of the Bible, described on several Assyrian cylinders, and in Assyrian inscriptions, perhaps referred to by Herodotus, was known with some certainty, and that the main outlines, at least, were securely fixed. A perusal of the book under review will dispel that impression. We do not, as a fact, know whether there was one campaign, or two; we do not know why Hezekiah stripped the Temple and Palace of their treasures, if he had determined to defend Jerusalem; we do not know what happened when 'the angel of the Lord went forth, and smote in the camp of the Assyrians an hundred fourscore and five thousand'. But, if we are content with a not too exact view of the distant scene, there are certain broad outlines which may be accepted, such as the devastation of the fenced cities of Judah, the capture of Sidon and other Phœnician cities by Sennacherib, the capture of Askelon and Ekron, the commencement of the siege of Jerusalem, the raising of the siege, the return of Sennacherib to Assyria. And to this we may add that we know the steps that Hezekiah took to divert 'the brook that flowed through the midst of the land', and we know all about the water tunnel that he caused to be excavated, leading from Gihon, through the hill of Ophel, to the Pool of Siloam, an important provision for defence. But there is much that is uncertain, and Dr. Honor's careful study deserves the attention of students of ancient history. He presents the various theories and hypotheses in a clear and impartial manner. He points out for instance, that the description of the campaign in Palestine, as given in the Rassam cylinders, is in very close correspondence with the account given in II Kings xviii, 13 to 16, but that it does not agree with the rest of the account in the same chapter. In accordance with the former the campaign was entirely successful; in accordance with the latter Sennacherib had to retire hastily to Assyria. Of course, as the author realizes, the Assyrian annalist was not likely to describe a failure; but even the accounts in Kings are, in themselves, not free from difficulties of interpretation.

For the ordinary reader it would have added much to the value and interest of the book if translations of the Assyrian sources had been given, or at least the more important of them. As it is, although there are copious notes and references to translations, there is not anywhere in the book an actual translation of an Assyrian text. Perhaps this improvement might be considered, in case a new edition of this study is issued in the future.

C. F. CLOSE.

A SHORT HISTORY OF ART FROM PREHISTORIC TIMES TO THE PRESENT DAY. Translated from the French of André S. Blum. Edited and enlarged by R. R. TATLOCK. London: Batsford. 21s.

Perhaps the first thing that should be said of this volume is that its title is somewhat misleading, since the contents are so far from being comprehensive that the art of the Far East and of Central America is not touched upon. The somewhat unconvincing excuse given for this omission is that something had to be left out and it was better to disregard several complete cultures rather than, for instance, the art of England or Holland. This alone is enough to show that we have not here that philosophical history of art for which there is so much room. M. Blum's book, despite the claims made for it is, in fact, no more than a textbook, and not a particularly original one at that. The treatment is sketchy and all too often becomes a dull catalogue of names.

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and dates. The following is a characteristic entry, taken at random. 'Gentile Bellini (1429—1507) is pre-eminently a chronicler of Venetian life. His masterpiece, carried out in 1496, is *The Procession in the Piazza S. Marco* in the Accademia, Venice. Among his other works are the organ shutters in St. Mark's, *The Miracle of the Holy Cross* (plate XLV, 6) in Venice Accademia, and *The Preaching of St. Mark* in the Brera'.

It may be remarked that the foregoing extract is a favourable example of the translator's style. He is not always so lucid. The following sentence, quite apart from the very questionable truth of its general sense, certainly does not succeed in giving a clear definition of the law of frontality. 'This law of frontality itself, by which the body was divided into two equal parts from the top of the head to the fork of the legs, did not result from technical incompetence, but was based on religious tradition'. It seems probable that a person ignorant of Egyptian art would conclude from this sentence that it represented the human figure cleft in two, owing to some obscure religious prejudice. Again, the phrase 'the curious palace of Lagash, disinterred by M. de Sarzec, which was later enlarged by Goudea', might well lead the uninformed to regard the second person as an enterprising French archaeologist or builder.

The one feature which might have rendered this book valuable, namely the numerous illustrations, is robbed of the greater part of its value by the extremely poor reproduction. It is hard to decide whether sculpture or painting suffers most in this way, but it is certain that no one unacquainted with most of the works reproduced, would be able to form the faintest conception of their beauty from these pages. The examples of architecture are but little better. Such photographs as there are, have been badly reproduced, and the fairly numerous drawings are far from being good enough to outweigh the advantages of a good photograph. There is no bibliography.

E. G. WITHERCOMBE.

BISON OF CLAY. By MAX BÉGOUEN. Longman. 1926. 7s. 6d.

To succeed, a romance about prehistory demands exceptional qualities in its author. If it is to be really alive and yet true to the facts, the writer must not only possess a vivid but scientifically schooled imagination, but also a perfect mastery both of the fragmentary data of archaeology and of the ethnographic material that may fill up the gaps in that record. Count Max Bégouen combines all these gifts to a remarkable degree and his 'novel' invests the upper Palaeolithic Age in France with a vividness and reality that no mere descriptive work can hope to attain. V. GORDON CHILDE.

PAPERS OF THE SOCIETY OF MURAL DECORATORS AND PAINTERS IN TEMPERA. Second volume, 1907-1924. Printed for the Society by the Dolphin Press, Brighton. 1925.

The principal archaeological interest of this very useful collection of papers lies in the articles on Minoan mural painting by Mr. Theodore Fyfe and Mr. Noel Heaton. The second of these gives a very detailed account of Mr. Heaton's careful analysis of the materials of the paintings at Knossos. The paintings proved to have been executed on fine stucco, averaging $\frac{3}{4}$ inch in thickness. This was apparently applied in two layers. The first, about $\frac{1}{4}$ inch thick, was applied to fill up the inequalities of the wall and give an even surface. The second layer of about $\frac{1}{4}$ inch was apparently put on from day to day in the usual manner with fresco painting, and Mr. Heaton believes

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that there is practically no doubt that these mural paintings were executed in true fresco. He also found that the stucco was formed from pure, rich lime and had apparently no sand or marble dust mixed with it, as was done in the case of Roman and medieval frescoes. One of the most interesting facts in this connexion is that an analysis proved that the pigments used were substantially the same as those in use in Roman and medieval times. This is particularly striking in the case of the beautiful blue pigment, which is a silicate of copper and soda and owes its peculiar texture to being in the form of a comparatively coarse powder.

Other papers of historical interest are those on the paintings in the Ajanta Caves, and on Medieval and English mural painting.

E. G. WITHEYCOMBE.

LONDON AND THE VIKINGS. By R. E. MORTIMER WHEELER, M.C., M.A., D.LIT., F.S.A. London Museum Catalogues: No. 1. Lancaster House, St. James's, S.W.1. 1927. 1s.

In this short text of 55 pages with 28 illustrations the 'general reader' has a masterly sketch of the Viking Age, its history—so far as London is concerned—and its relics. In his introduction Dr Wheeler rightly brings forward the commercial and industrial side of the Northern invaders who were 'a vitalizing force' that 'aroused Saxon London to a partial realization of [her] destiny'; and the story of the Vikings in London is full of dramatic incident and interest. He goes on to discuss local finds of weapons and tools, house-furniture, ornaments and domestic details, indicating their development and dating in the light of modern research. These examples, together with the British Museum guide to Anglo-Saxon Antiquities, will be found of great service to amateurs who are puzzled by casual finds unexplained in older books and needing reference to Scandinavian authorities not easily accessible. Dr Wheeler's eminence guarantees the scholarly character of his work; he treats the evolution of axes, spears and swords in a summary manner, but more elaborate analysis would be out of place, and his account is logical and lucid. A few misprints might be corrected with the reader's pen:—on p. 7, read 'Aethelwerd' and 'vfk' (to mark the vowel long); p. 11, 'Ceolwulf'; p. 13, 'activity'; and if (St.) 'Olaf' is so written on following pages, read here also 'Olaf' (Tryggvason). On p. 23 an 'l' has crept into 'Ringerike' and on p. 24 an 'm' into 'Grim's dyke.' 'Hesket (not 'Heslet') is the site from which is the axe in Carlisle Museum, mentioned on p. 25; and we beg for 'the Lake of Geneva' (p. 28) as well as 'Kirk' (not St.) Maughold on p. 35. It is hardly certain that the Whalley crosses (p. 40) are standard examples of ninth or tenth century design; some would put them a little later. The Viking Club (p. 55) has long since called itself a Society, to avoid confusion with the Viking Club of carmen. Danish and Scandinavian readers—and there will be many—would prefer to see the names of Dr. 'Brogger' and Dr. 'Brondsted' spelt phonetically. But these trifles of a first edition do not detract from the value of a book which is much more than the catalogue of one collection, and ought to be in the hands of all who desire right views on the Viking Age.

W. G. COLLINGWOOD.

LAS ANTIGUAS CIVILIZACIONES ESMERALDEÑAS. By MAX UHLER. (From *Anales de la Universidad Central*, vol. 38, no. 259). Quito, 1927. pp. 32.

The learned Americanist gives an account of the relations between the early coastal and mountain cultures in Ecuador, where there is a greater difference between

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the two climates than elsewhere on the west coast. He says: 'I showed in one of my lectures... that the earliest cultures of the Andine region of Ecuador came from Central American culture'; as in many cases they had to pass over the Ecuador coast, a study of these coastal cultures is necessary for the understanding of the Andine. Summing up the latest discoveries here, 'we may say that in general the immigration of the earliest cultures was by way of the sea only', not north to south along the mountains; its period being the first six centuries of our era. There was an 'avalanche' of 'Mayoid' cultures into the plateau. In the second part he studies in detail the cultural remains of the coastal province of Esmeraldas, which show very great diversity; 'Mayoid' objects are found from the very beginning. Dr Uhle stresses the importance of Ecuador owing to its position near Central America, whose cultures have been 'the origin of all others on the American continent'.

G. C. WHEELER.

PALAEONTOLOGIA SINICA. Series D, volume 1. **GEOLOGICAL SURVEY OF CHINA, PEKIN.** Fascicle 1: The Cave-deposit at Sha Kuo T'un in Fengtien. By J. G. ANDERSSON. 1923. pp. 43, 12 plates, 20 text-figures. Fascicle 2: Painted stone age pottery from the province of Honan, China. By T. J. ARNE. 1925. pp. 40, 13 plates (six in colour), 63 text-figures. Fascicle 3: The human skeletal remains from the Sha Kuo T'un cave-deposit in comparison with those from Yang Shao Tsun and with recent north China skeletal material. By DAVIDSON BLACK. 1925. pp. 120, 14 plates, 86 tables.

MEMOIRS OF THE GEOLOGICAL SURVEY OF CHINA. Series A, no. 5. Preliminary report on archaeological researches in Kansu. By J. G. ANDERSSON. Pekin. 1925. pp. 56, 12 plates.

[Agents: Kegan Paul, Trench, Trubner and Co., London].

It is very much to be hoped that the present troubles in China will not prevent Dr Anderson from continuing this admirable survey of the prehistoric sites in northern and north-eastern China. By it another and most important extension has been added to the chain that already connects the painted pottery of Europe with that of Elam and India. On many sites in the provinces of Fengtien, Kansu and Honan Dr Anderson has found painted pottery made by a primitive people, many of the designs on which are identical with those found on the painted wares of north-western India, southern Persia, Mesopotamia and southern Turkestan.

Many of the simpler *motifs* on this painted pottery might quite possibly have been invented independently, but this can hardly have been the case with the more complicated designs, such as the so-called 'double-axe' *motif*. This design, which is sometimes picked out in two colours, occurs both on the archaic pottery of China and on the corresponding wares of other countries to the west, arranged either in groups or between lines to form a border.

In form, however, and in the variety of clay employed, the early Chinese pottery differs in some respects from the painted wares of the western countries, although allied to them by the designs it bears. In fact, in each country that was occupied by the culture that produced this early painted ware, those pottery shapes were made that were most suitable to the immediate surroundings and the clay used was that to hand. The shapes of the early Chinese pottery are in the main simple bowls, and dishes, the former of which commonly have tripod legs and are allied in form to the

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polypod bowls used by the 'Bell-beaker' folk and found in Spain, Sardinia and other sites in Europe. Some of the larger and taller vessels have well formed loop-handles on either side about half-way down the jar; and the occurrence in the Honan pottery of notched ledge-handles in the same position recalls the exactly similar handles on painted jars of the first Semitic period of Palestine. Ledge-handles are also common on the pottery of predynastic Egypt.

The broad incised strap-handles found on some fragments of pottery from the Chi Chia P'ing site, which were presumably paired, bear a strong resemblance to some of the simpler handles of the single-handled ware found in pre-Sargonic graves at Kish. Of particular interest is the fact that some of the vessels were ornamented with simple designs made with a cord, a technique also found in the burials of the south Russian steppes, of Austria and other places in Europe, but at present unknown elsewhere in Asia. A peculiar feature of the ancient Chinese pottery is the frequent occurrence of mat designs, a form of ornament that is quite new to us. One would like to suggest that the vessels (which were always hand made) were rolled on a mat when partially dry to give them a more regular shape; but the fact that the legs of some of the bowls bear similar impressions negatives this suggestion.

The clays from which the painted pottery of China was made vary considerably. We note a grey ware which is the natural colour of the clay, a ware with a red surface and grey inside produced by heavy firing, a light red ware and a beige-coloured ware amongst others. The grey ware is most frequently decorated with red, and the red ware in black and dark red, both monochrome and polychrome pottery being found. A white slip was often used and occasionally a red. We notice that Dr Andersson describes pottery that is merely covered with a slip as monochrome. This is misleading and should be corrected in further reports on his excavations.

Though the pottery belongs to various periods, there is no reason to suppose that these were separated by any very great length of time; on the majority of the sites little or no metal was found.

In his contribution to the series, Dr Arne, the distinguished Swedish archaeologist, deals fully with the painted pottery from the province of Honan. He gives us line-drawings of the principal shapes, and his comparisons of the decorative *motifs* with some of the *motifs* on the painted pottery of other countries, Baluchistan, Susa and Anau, are invaluable, especially as he reproduces some of the *motifs* on the painted pottery from the latter countries to emphasize his points. Dr Meyersberg contributes analyses of the slips and materials of some of the painted ware.

The pottery from the province of Honan (the large Yang Shao site and the cave deposits at Sha Kuo T'un) is dated provisionally by Dr Andersson to before 2500 B.C., but from observations on the painted pottery from Mohenjo-Daro in Sind and some of the painted ware discovered by Sir Aurel Stein in northern Baluchistan, I am inclined to regard it as of earlier date. Some very thin ware found in Honan is compared by Dr. Andersson with the thin ware of the first period of Susa. It is also comparable, though not in the designs painted upon it, with the thin painted ware found by Mr Hargreaves at Nal in southern Baluchistan; this latter is certainly of earlier date than the pottery of Mohenjo-Daro and approximates very closely to that of the earliest period of Susa, despite divergences in the style and *motifs* of the painted designs.

The Kansu pottery, like the Honan pottery, was associated with implements of bone and stone. Some of it was found in graves and some in village sites. A most

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interesting implement found on some of the sites in this province is a sickle of bone with a cutting-edge of inset flint-flakes. The same type of sickle is found on many Babylonian sites of early date, but with a different curvature and made of pottery; the notched flint-flakes were attached to the holder with bitumen. Very much the same form of sickle has been found at Kahun in Egypt with the flint teeth fastened to a wooden holder with a mixture of Nile mud and glue.

Dr Andersson suggests that the Kansu and Honan sites have so much in common, especially in their painted pottery, that they may be regarded as contemporaneous and belonging to the same culture. But it must be pointed out that on some of the Kansu pieces—fine well-shaped vessels with two handles—the designs are sometimes much involved; the very elaborate scroll work on some of them approximates in conception to Minoan designs rather than to the simpler linear designs of ancient Babylonia, Persia, Baluchistan and India. I would certainly date the Kansu sites as rather later than those in Honan, despite the fact that on both no metal was found with the painted pottery, except in the higher levels.

Dr Black's volume of the series under review deals satisfactorily with the bones found at Sha Kuo T'un in Fengtien and also at Yang Shao Tsun in Honan. In his report on the bones from the former site, which represent a minimum of forty-five individuals, children and adults, Dr Black, in agreement with Dr Andersson, states that many of the long bones were fractured at the time of death or shortly afterwards. As Dr Andersson points out in his contribution on the excavation of the cave, this suggests that its former occupants were either cannibals or that 'it was a votive site where religious rites, including the sacrifice of human lives, were performed'. The bones in the cave, many of them partially burnt and all in disarray, were associated with fragments of painted pottery similar to and probably contemporaneous with much of the Honan pottery. Tools and implements of stone and bone, including polished stone celts and carefully worked arrowheads, were also fairly common. Finely worked rings of marble and shell of a surprising thinness Dr Andersson prefers to class as pendants rather than bracelets. Other countries, however, can show equally thin and fragile bracelets; for example, the thin polished flint bracelets of early Egypt. No trace of metal was found in the cave, and the finely worked stone implements show it to be of neolithic date.

One or more of the Kansu graves contained bones that were coloured with a red pigment, a feature met with in the early contracted burials of south Russia, but unknown in the countries of the Near and Middle East. This curious practice, says Dr Black, is also known in certain early historic Chinese burials.

According to Dr Black, the people of the Kansu graves were people of medium height. The muscular development of both sexes was very marked and the general cranial and skeletal features exhibit characters belonging to the Mongoloid division of mankind. The same is apparently true of the remains from the Honan cave, but there the bones were in bad condition and the cranial evidence was very limited. The people of the painted pottery culture, therefore, broadly correspond with the modern northern Chinese. Three skulls of this early pre-metallic period are, however, of a slightly different type, distinguished by Dr Black as 'type x'. They do not possess in such a marked degree the peculiar flat face common to the other skulls, and Dr Black suggests that it was from 'type x' people that the proto-Chinese type was derived. We may perhaps see in these skulls the type of head possessed by the

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introducers of the painted ware into north China, people who were themselves gradually assimilated after spreading their culture in their new home.

The early painted pottery culture is proved by these researches to have extended over a much vaster area than previously supposed. A comparatively short time ago it was only known as far east as 'Anau in Turkestan' and south as Sumer and Elam. More recently, it has been found to extend into both northern and southern Baluchistan; and the excavations at Mohenjo-Daro in Sind and at Harappa in the Punjab have brought the known limits of the culture still further to the south-east. The careful work of Dr Andersson has now extended its eastward range a distance of roughly 2,500 miles; that is, the painted pottery culture of prehistoric times extended from one end of the continent of Asia to the other, as well as penetrating into Europe.

These four books should be in the hands of every student of archaeology, and they will be especially appreciated by those who are interested in ancient painted wares. They are clearly arranged and exceptionally well got up for monographs of this description. It would, however, have been convenient if a map of northern China had been included in one of them. The printing was done in Stockholm.

Mr Ting and Mr Wong, the Directors of the Geological Survey of China, as well as the authors of the various monographs just reviewed, should be congratulated on the invaluable series of books they are publishing.

ERNEST MACKAY.

NORTHUMBRIAN CROSSES OF THE PRE-NORMAN AGE. By W. G. COLLINGWOOD, M.A., F.S.A. Faber and Gwyer. 1927. pp. 196. 30s.

It is a great advantage to readers of this handsome volume that the author is a skilled artist as well as a careful historian. The line-drawings made by himself from a direct study of the originals show clearly details of the design free from irregularities and weatherings and unaffected by differences of light and elevation. Besides this his knowledge and experience enable him to recognize formless fragments and their relative position, so that his familiarity with the inscriptions of the period, and the forms of the monuments and character of the ornament, lead him to suggest a reasonable and convincing restoration of the missing portions.

It is, however, from the historical point of view that the author approaches the subject, helping us to an understanding of what these monuments mean; he has among other things brought to light facts which lead him to believe that there was a considerable abbey at Lancaster and another at Hoddam, though no record of either exists in writing. In other ways his suggestive and thought-provoking book will lead historians to research.

It has long been known that relics of the early British Church are to be found in Cornwall, Wales and Galloway. Mr Collingwood regards the stone of S. Peter the Apostle at Whithorn as imitated from these rude stone pillars and forming the first of a series of Anglian monuments. This stone, which he dates as early eighth century, he would explain as a record of new conditions: 'the old place of S. Martin and S. Ninian is now the place of S. Peter the Apostle, reformed and brought into communion with the Anglo-Roman Church of S. Wilfrid and the Synod of Whitby'.

A short chapter deals with staff-roads, from which the Anglian high cross appears to have developed. Following this, we have a chapter on cross-slabs, their form and decorative treatment, which Mr Collingwood argues must have had an independent development; slab-cutting being a separate art with its own methods and traditions,

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in use concurrently with staff-roads and tall crosses throughout the whole pre-Norman age.

We are told about the people among whom these crosses were set up, and how the two races, British and Saxon, 'commingled, created a great nation'—which was to become a mother of the arts. The author gives good reasons for differing from those who regard Northumbria in the eighth century as barbarous, while, on his view, no time and no place could be more favourable for this particular development. Bishop Acca died in 740; his work, which 'must have brought to Hexham some skilled craftsmen and must have trained more', combined the idea of the staff-rod with that of the stone-pillar, developing into the high cross. Such crosses, as was thought by O'Neill of the Irish crosses, were usually polychromatic, and in later stones Mr Collingwood has found 'holes in the centres of the cross-heads in which bits of bright glass must have been set like the jewels of the Ormside cup'. The knowledge of interlacing was already well advanced elsewhere, and contemporary plaits in Italy are given for comparison,—those on the slabs in Ireland and at Hartlepool and Lindisfarne having been dealt with in a previous chapter. With respect to the latter Mr Collingwood regards them as belonging to the close of the ninth century, and not the seventh as thought by Prof. Baldwin Brown.

The chapter on free-armed crosses will probably be of the most popular interest. This deals with the two great crosses of Bewcastle and Ruthwell. Anglian crosses we are told begin with the forms on S. Cuthbert's coffin and his pectoral cross, without the little bosses between the limbs of the latter, and this must have been the type adopted at Ruthwell; Dr King Hewison having been misled by the damaged offset at the base of the head originally intended to turn the rain from the joint. Bewcastle must have had a head made from a separate stone and dowelled to the shaft, while the *Epistylum* of Spelman, which puzzled Prof. Baldwin Brown, is explained not as an 'impost' but as the upper limb of such a free-armed cross. The explanation, logical and convincing, fits in with the facts as known, and, taken with Mr Collingwood's sketch (drawn to scale), will probably satisfy the reader that this was indeed the form of the cross.

In proposing dates, he enlists our confidence by working out a provisional scheme for the whole series of Anglian monuments, within which the various pieces fall into place in their respective classes. In doing this he sets forth his reasons fully, taking into consideration the local history as well as details of ornament and of inscriptions, so that the reader is put into a position to weigh the evidence whether he agrees with the conclusion or otherwise. Seven districts or local schools of sculpturing are recognized, and in the Hoddam group are placed Ruthwell and Bewcastle, which therefore should date 'rather late in the eighth century'. In trusting to typology and not to the runes he is in agreement with Dr Bronsted, who however suggests an earlier date than Mr Collingwood finds possible to meet.

From the purely Anglian crosses he passes on to a consideration of the Anglo-Danish and the Anglo-Norse. It is most interesting and instructive to have these monuments thus assembled and presented for comparison. Especially interesting for some of us is the chapter dealing with the free wheel-head, a characteristic shared by Danish and Norse districts and distinguishing the Viking Age crosses from the Anglian. The term 'wheel-head' is used in its generally accepted sense, but it might have been worth while to have called attention to the standard analysis in *Early Christian Monuments of Scotland* (1903), where Romilly Allen had unfortunately

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overlooked the fact that this use had the priority, as for example in Canon Bright's *Early English Church* (1888), and himself defined and figured under this term a different form of cross to which Mr Collingwood now gives the name of 'disc-face', reserving that of 'wheel-head' for what Romilly Allen describes as a 'cross with connecting ring'.

It is in this latter sense that the author refers to the Isle of Man as possibly its place of origin, and his accompanying map shows its distribution radiating from the Island to all points of the compass. But it may have reached the Isle of Man from Candida Casa, originating like the Whithorn stone of S. Peter from the Chi-Rho monogram, as argued by Romilly Allen. In this connexion he speaks of the little slab at Maughold with the peculiar inscription in mixed majuscules and minuscules and of course no word-divisions; but there are difficulties in accepting his very ingenious reading. The inscription, enclosed within a circle completely filled by it, has unfortunately had some letters flaked away at the top; what remain however are quite legible. The Chi, preceded by a space that would allow of two letters, is followed by another giving room for four, after which are the letters NETSPLIEPPSDHINSUL (?), followed by a sign which might stand for ET and met by another word written from the opposite direction—ABPAT. It is a tantalizing puzzle which no doubt will be solved in time.

The connexion between Anglian art and that of the Scottish crosses is touched upon and the general spread of its influence throughout Britain and even on the Continent. Those who will have carefully read the book and considered the arguments and the facts so far presented, will by now have their minds prepared to receive with sympathy a proposition which at first might seem overbold, but is here very modestly set forth 'rather for the reader's consideration than in the hope of his immediate conviction', namely 'that all monumental art and craft in the north-west of Europe sprang from Northumbria'.

Long, patient and careful study have gone to the making of a work which will be welcomed by all interested in the history and early development of Christianity in our midst; providing a sure foundation for the correct dating of the whole series of early Christian monuments in the British Isles and leading to an understanding of the relation of scattered members and a view of the whole in a true perspective. The matter is well arranged and Mr Collingwood follows his own precept given in his 'outline of a Philosophy of Art', that is to say: 'the attempt to cover much ground in few words is an attempt always worth making', but only a master could succeed as he has done. His clear and unaffected style make pleasant reading, and interest is sustained throughout by unexpected quotations, apt comparisons, and illustrations enlivened by imagination. The index introduces a convenient feature in giving with the sites of the monuments their suggested dates. The type is appropriate and clear. The illustrations are plentiful and exceedingly good; with such excellent paper they are well shown on the page, avoiding the necessity for stiff plates with the ugliness of their white backs and the nuisance of their constant interruption of the reading. Altogether it is a beautiful and fascinating volume.

P. M. C. KERMODE.

EXCAVATIONS IN NEW FOREST ROMAN POTTERY SITES. By
HEYWOOD SUMNER, F.S.A. Chiswick Press. 1927. pp. 123. 12s. 6d.

Here is a book of which it is difficult to speak without appearing extravagant.

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Merely to open it is to be charmed by beautiful type, beautifully arranged on excellent paper ; to turn a few pages is to encounter illustrations as eloquent in their significance as they are tasteful in their execution ; and to read is to run grave danger of absolute bewitchment. Enter these enchanted woods, you who dare ; you shall find Mr Sumner pursuing his investigations in surroundings which he finds time to observe thus :—' Deer are inquisitive. They stand and gaze—then bound away—then stop to gaze once more, before finally deciding to avoid the intruder. Ponies ignore intrusion, they are bent on feed ; not so cattle, their curiosity is tiresome. Rabbits and squirrels seem to want to know, but fear knowledge. Owls hoot to each other all day long, wood-peckers yaffle to themselves. Such was my estimate of company in Old Sloden Wood '.

To write like that is to betray a vivid imagination and a most delicate faculty of observation. To these add scholarship and you have a mind perfectly gifted for archaeological research. And Mr Sumner's scholarship is as sound as his draughtsmanship. The result is a little book which bears on every page the marks of a classic. It is a reprint of two pamphlets some years old, with additions ; but its unity is secured by the perfect harmony which the author has imposed upon its various parts. Archaeological reports ought to be works of art, without ceasing to be works of science ; but this they very rarely achieve. When they do, their scientific value is not impaired, but actually enhanced in direct proportion to the intensity of the creative imagination which has worked upon the dry bones of archaeology.

One comment may perhaps be added. The Romano-British potter's hut at Island Thorns (p. 103), if you add a sleeping-platform on the right, symmetrical with that on the left, and indulge in a stone-built hearth, with a chimney, where Mr Sumner found the fireplace, would be exactly like the huts built to this day by itinerant charcoal-burners and bark-peelers among the woods of High Furness. These huts are built to be lived in for a season ; after that, they undergo a slow decay, enviable haunts for children of the neighbourhood, until, collapsing, they leave mere hut-circles behind them. Mr Sumner has sketched in a single vivid sentence the life of ancient potters in such a hut. He has imagined the hut a snug, comfortable sort of place ; and, as usual, his imagination is right. *Experto crede.* R. G. COLLINGWOOD.

THE BEGINNING OF THINGS. *New Year's Day*, by S. H. HOOKE. *Corn from Egypt*, by M. GOMPERTZ. *The Golden Age*, by H. J. MASSINGHAM. Gerald Howe. 1927. 2s. 6d. each.

These little books of 88 pages each, edited by Prof. Elliot Smith, may be expected to fall in with his views, but in these three out of a dozen, the views are not allowed to dominate, and the authors deal with matters impartially. The account of the calendar describes its gradual settlement in various countries. It is assumed that there is a difficulty in finding the length of the year, but anyone can do that easily by the count of days between like directions of the azimuth of the sunset at about the equinox. It is by no means certain, since the discoveries at Ur, that facts 'point clearly to the priority of Egyptian civilization'. It is said that a calendar presupposes . . . language, or script, a numeral system, mechanical means of measuring time, units of measurement and writing materials'. This sounds formidable, but scarcely any of these items were used for the clog almanacs, notched on a piece of wood, which were the popular time keepers in the Middle Ages. Some notice should be taken of the

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Italic register of years, by the priest driving a nail into the temple doorpost. A mention is needed of the many lengths of week in different countries, from 4 up to 20. The book by Mr Colson on the week, which appeared last year, should certainly be quoted and relied on as an authority.

Dr Gompertz on 'Corn from Egypt' concludes that the cereals are Asiatic in origin, and that barley preceded emmer wheat in Egypt, as that preceded modern wheat. The calendar comes in again, and 'it is obvious that such a complicated system as the calendar year with its leap day once in four . . . could not have arisen independently in different parts of the earth'. Why not? A couple of stones for direction marks, and a stick to notch the days, are all that anyone needs to settle this matter in a few years. A little more familiarity with things Egyptian would have saved some slips, which no doubt the author will correct in future.

The Golden Age is a dream of Arcadia, when all were virtuous, and the wickedness of wealth had not yet arisen. 'Moral and social inequality was introduced into the world by property in land, the consequence of the invention of agriculture'. But how about Sheykh Abraham, with flocks and herds and 318 followers, wandering up and down without even land for a tomb, yet with plenty of social inequality? This Rousseauism is nonsense. History is simplified out of recognition when we read: 'It is fairly clear that agriculture was the invention of one man who virtually established . . . theology and the kingship'. Certainly rule and religion flourished among those who knew nothing of agriculture. The truth is that the Golden Age is easy enough when there is plenty of elbow room, but vanishes when the pressure of population drives. If the animals had any voice in the matter they would tell a bloody tale of the horrors of a hunting people, who depend upon destruction. The first breach of innocence was when a wicked protozoon first devoured a sun-bred vegetable, as Heron Allen remarked. It is no use to bleat for paradise; the candle of civilization is worth the tallow.

FLINDERS PETRIE.

ARTHUR OF BRITAIN. By E. K. CHAMBERS. Sidgwick and Jackson. 1927. pp. iv, 299. 10s. 6d.

CELTIC MYTH AND ARTHURIAN ROMANCE. By ROGER SHEERMAN LOOMIS. New York: Columbia University Press. London: Humphrey Milford. 1927. pp. xii, 370; with two illustrations. \$6.

Sir Edmund Chambers begins with a scholarly account of the earlier authors who touched on the matter of King Arthur, from Gildas to Geoffrey of Monmouth, and describes how Geoffrey's work won acceptance in the twelfth century, followed by the great body of romances. He then discusses 'the historicity of Arthur', in which he does not abandon faith; concluding that a real war-leader operated south of the Thames, but not wherever his name has been attached by romantic fancy and local patriotism to outlying places. Chapter VII sketches some of the theories connecting the legends with various poems of Celtic mythology. 'It is not to be denied', he says, 'that there may be points of contact between the Arthurian and Irish stories'; but he also gives a place to German and Scandinavian folklore where it offers analogies in details. He adds full extracts from the Latin originals of early Gallic chronicles and others down to the fourteenth century, ending with a bibliography which makes a reader thankful for the brevity of this lucid handbook.

As to the main points he makes, there can be little dispute. Perhaps he attributes

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too much to the unaided ingenuity of 'the learned and unscrupulous old canon of St. George's in Oxford, Geoffrey of Monmouth'. Perhaps he might have studied a little further the very doubtful value of 'Nennius' as to such names as Urien of Rheged (p. 61) and considered the Welsh-Viking pedigrees analysed by Mr G. Peredur Jones in *Y Cymmrodor* (vol. xxv, 1925). Perhaps it is too strong to say (p. 98), 'Historically, the combatants at Ardderyd . . . ' as if Skene had settled the business of that mysterious battle. But these are inessential; the book is very carefully written and it is a useful manual of a famous subject.

In passing, he twits Sir John Rhys with using bits of Malory as materials for analysis of far-away folklore. This is just what Professor Loomis does, and with conviction. He takes up the question where Rhys left it and proceeds in a similar method; but he gives a new turn to the whole investigation by putting the weight on Irish rather than Welsh origins. He points out, what is often forgotten, that Britain was always susceptible to Irish influences; from time to time between the Roman age and the Norman there was importation of Irish motives and this, we think, might be strengthened by considering the history of ornament. But these imports did not affect Wales so much as Devon and Cornwall, and thence Brittany and the French. In Wales, the parallel folklore never crystallized into Arthurian romance until comparatively late times, when Rhys ab Tewdwr (1077) brought in the Round Table ready-made; when the Welsh minstrel Bleheris told stories of Breton form, and the *Mabinogion* book took shape, not before the twelfth century. Therefore, he argues, the sources of Arthurian legend are to be found by following such clues as are available from Brittany back to Dumnonia and thence to pagan Ireland.

Now, in Ireland, the Ulster cycle of Cuchullain is known; but there must have been also a Munster cycle of Curoi mac Daire, in which Cuchullain was only 'little Curoi', a secondary figure. The Dumnonians, he infers, received traditions from Munster; to them Curoi was protagonist, and his figure is to be seen, *mutatis mutandis*, in the Arthurian knights. All the figures of romance are traced back to Irish mythology, not excepting Merlin, whom Sir E. K. Chambers thinks invented by Geoffrey, and Lancelot, who has been usually regarded as a late creation. The only exception is Arthur himself. To make out this view the author throws over phonology and trusts to resemblance of names, often rather slight and, like Rhys, he explains away the difficulties by supposing mistranscription, thumbed manuscript, and so forth. But he rests more strongly on resemblances of character and incidents. In following him we are conscious of leaps in the dark, though no doubt the steps in his argument are not impracticable to a wanderer in dreamland.

The later part of his book is occupied with the Grail. It leads to the surprising conclusion that in this sacramental mystery, so sentimental as we have it, and so far removed from the grosser part of human nature, we are to see reminiscences of primitive initiation-rites, postulated as existing in pagan Ireland and referred back through late Gaelic speculation on the genesis of races to Greece. Nothing seems to be offered to prove that the medieval romances were conscious of the curious character of their sources; one would suppose that they did not know what was meant, a thousand years earlier, by the symbols. And yet Professor Loomis suggests that the late eleventh-century cross-designers intended sun and moon worship by their patterns (p. 43); whereas the student of art-history can hardly help believing that all such motives had by then become merely the commonplaces of ornament.

Both our authors accept Arthur's historical reality. They base it on 'Nennius

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of the ninth century ' and on Gildas' mention of Mount Badon. But Gildas does not name Arthur. The late Rev. D. H. Haigh, in his attempt to blend legends into history, explained the silence as animosity on the part of Gildas towards the slayer of Hoel; but Gildas names many of whom he has no good to say. Excepting Nennius and *Annales Cambriae*, equally hazy, nothing is heard of Arthur before the Breton *Life of St. Goeznocius*, which claims to be of 1019 but is not a firmly fixed point. In fact, we are not sure of anything about Arthur until we come to the Modena carving, which Professor Loomis gives as a frontispiece; and he makes out a good case for dating it 1099-1106 and seeing in it the result of Alan of Brittany's visit to Italy in 1096. By that time, five hundred years after the period of any historic Arthur, Arthurian romance had developed; and it must be noted that it could not have developed much before the beginning of the eleventh century, because the earliest form of the romance, in Geoffrey of Monmouth, describes the battles of Athelstan as Arthur's.

So far we are with the doubters; but we said just now that for Arthur himself no original could be found in Celtic mythology. Sir John Rhys tried his best in that search; Professor Loomis gives it up and says, 'There is nothing in the legends to identify him with a plowman or a bear, divine or otherwise'. If Arthur was not a god, whence did he come, unless as a tradition, the folk-memory of a real hero, around whose honoured name clustered the confused memories of the earlier world?

Written record has been searched and analysed so fully that we need not try to brew the dregs again. What is left to do? We are in the position some of us remember when the story of Hadrian's Wall was thought complete and the page turned down with a scanty and fallacious paragraph. Nobody knew, forty years ago, what was to be discovered by digging. For Arthur, we must wait the results of exploration at post-Roman sites; and that exploration is going on. It may possibly reveal a period and an area of fighting between Britons and Saxons, so as to give support to the legend; or it may make the belief finally untenable. Meanwhile there is little use in raking over the chronicles or dreaming at Cadbury and Ashbury. Some day there will be facts to discuss.

W. G. COLLINGWOOD.

THE POTTERY FROM THE LONG BARROW AT WEST KENNET, WILTS.

Compiled by M. E. CUNNINGTON. Printed for private circulation, by George Simpson and Co., Devizes. 1927. pp. 19 and 13 plates.

We are all deeply indebted to Mrs Cunnington for making available these illustrations and notes on the West Kennet pottery. The Long Barrow in which it was found in 1859 is one of the best known examples of its kind, and the discovery of pottery in one of the burial-chambers was an unusual incident. No adequate account of the pottery has been published during the 68 years which have elapsed since Dr Thurnam found it.

The text is confined to six pages of introduction and an objective description of the fragments themselves. These are illustrated by half-tone illustrations which unfortunately are of very inferior quality. The original photographs were evidently very poor, since plate ix (from a British Museum photograph) is much better than the rest. Such deficiencies, moreover, cannot be made good by brush-work upon the print before the block is made from it; brush-work of this kind should never be permitted in scientific work; it is always a sign of photographic incompetence. The plates are further disfigured by the ugly and unnecessary black lines in which block-makers see fit to frame their productions; and by the Museum numbers (e.g. x. 94)

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in large white figures, which appear on each fragment. Could not this have been written on the inner (unornamented) face? We emphasize these points because the illustrations are here admittedly the prime object of the undertaking.

The pottery consists of between 250 and 300 fragments, of which 15 are in the British Museum. It is of two distinct types; the greater number are pieces of large vessels of thick coarse ware, the others are undoubted beaker pottery; in addition to these there are a few exceptional pieces (see figs. 13, 15, 69, 73-5, 112-3). With these remarks we entirely agree; there could indeed be no two opinions about the beaker fragments; and the deposit seems clearly to have been intact when Thurnam found it. (Mrs Cunnington makes this quite clear, and the reasons why Thurnam was puzzled by the implications involved). Of the exceptional pieces, fig. 69 seems to us (so far as we can judge from the blurred reproduction) to be identical with some fragments found at Woodhenge and ornamented with a grooved chevron. We cannot agree that 'the vessel represented by figs. 81 and 112 is, probably, also a Bronze Age type', or that it would have appeared perfectly normal if it had been found at All Cannings Cross. There is a discrepancy between the British Museum photograph (fig. 81) and the restored drawing (fig. 112). If both are part of the same vessel, fig. 112 should have, below the lip, the 'finger-nail' ornament which is plainly visible on the photograph. There is, too, no scale to figs. 112 and 113. A small visual scale should have been inserted in each plate—another omission for which the photographer is partly to blame.

LES IBÉRO-MASTIÈNES EN GAULE ET TARTESSOS EN AQUITAINE.

Par L. GUIGNARD (GAULOIS). Autun: Guignard-Nourry. 1926. pp. 171, with 3 maps.

M. Guignard's text is that there was a displacement of traditions as well as of peoples in the Iberian peninsula in the second century B.C., when the Lusitanians of Galicia were transplanted by the Romans to Alemtejo and the Algarve; thus Erythia and the land of Geryon, brought to the Algarve at that time by the Cynetes with their other traditions, belong properly to Galicia and the Cantabrian coast. The Gadir associated with Erythia is consequently not the Cadiz Gadir but another, and the confusion between the two has brought the Erythia tradition eastwards again from the Algarve along the coast of the Gulf of Cadiz. The Cynetes having been a Cantabrian tribe before their conquest by the Romans, the line of tribes given by Herodorus of Heraclea—Cynetes, Gletes, Tartessians, Elhysines, Mastians and Celcians (Calpians)—may be 'dressed' on the Cynetes, so that these tribes lie along the Cantabrian Mountains and the Pyrenees, and touch the Rhone on the east. Hence the Tartessians, and Tartessus, are in Aquitaine. The usual alignment along the southern and Mediterranean coasts of Spain, apparently justified by the fragment from Hecataeus which places the Mastians 'near the Pillars of Hercules', is wrong because two quite different groups of Mastians have been confused, one lying north of the Pyrenees, the other in the south of Spain. Hence Ibero-Mastians in Gaul, to be distinguished from Eleo-Mastians in Africa who become Phoenico-Mastians in Spain. Both the Eleo-Mastians and the Phoenico-Mastians set up a Tarshish, and the two settlements have been confused with Tartessus.

Such is M. Guignard's text, not unreasonable and not, one would think, unlimited in scope. Nevertheless it takes M. Guignard a very long way indeed, or rather it

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brings him round by very long ways indeed from the ultimate origins in the Danubian-Balkan focus. To the present reviewer he seems to prove a great deal too much for his text, and the evidence—from homonyms attached to widely distant places, from the similarity of radicals in place-names, from archaeological correspondences which have no apparent connexion with the homonyms, and from modern skull measurements which must certainly be ruled out as evidence—makes up a hypothetical reconstruction no doubt, but certainly not a coherent logical argument.

The specific question of a Tartessus in Aquitaine and the squaring of this conception with the texts is rather a different matter. There is a great deal of evidence which must either be glossed over or rejected if a Baetic Tartessus is to be accepted, and the discussion of an Aquitanian Tartessus is well suited to bring this out. But again M. Guignard seems to try to prove too much. That a Baetic Tartessus is inconsistent with the periplus of Ephorus most people will agree; it may be that an Aquitanian Tartessus fits that periplus; what seems certain is that an Aquitanian Tartessus is quite inconsistent with the Ora Maritima of Avienus, and M. Guignard's attempts to match the two only make this more evident. M. Guignard in fact merely complicates matters by bringing forward a new Tartessus which is still open to the objection that its river brings down no tin (it is amusing to see that he gets over this difficulty in exactly the same way as Professor Schulten does for the Baetic Tartessus); a new Erythia for which there is no island available as candidate—moreover one would have to go east from Galicia (*i.e.* from the tin and from the likelihood of a neighbouring Gadir) before there would be even the possibility of finding an island joined by alluviation to the mainland during the historical period; a new Gadir which perishes centuries before either of the periploi, yet leaves a tradition strong enough to enable it to travel south with the Cynetes and bring with it a Tartessus which somehow, although originally two days distant by sea, becomes settled on a neighbouring location, defined by tradition, as reported by Strabo, with remarkable precision; and so on. It is all very unconvincing, and how loose the statement is one can see by noting the easy way in which the Cynetes, whom Strabo does not mention, slip in above with the Lusitanians whom he does. There is a nationalism in the tone of the writing, too, which suggests that one day the Tartessus question may have to be referred to the League of Nations. In the meantime M. Guignard ought in fairness to address his arguments to Professor Schulten's case, rather than to the case put forward by the older historical school.

R. AITKEN.

CIVILITZACIO MEGALITICA A CATALUNYA: Contribució al seu Estudi.
Per J. SERRA VILARÓ. Solsona. 1927. pp. 351, and 470 figures.

This book must be accepted as a necessary companion of Dr Luis Pericot's *Civilización Megalítica Catalana* (Barcelona, 1925), for although the title of both works suggests a definitive survey of the Catalan megaliths, in reality each is incomplete without the other, Dr Pericot, of course, being unable to include this remarkable regional study by Mosen Serra Vilaró, still unpublished when he wrote, and Serra Vilaró in his turn seeing no reason to repeat Pericot's account of the rest of the Catalan megaliths. Both books, however, are admirable, and the objection that there are two of them instead of one is of small account. Mosen Serra Vilaró's book therefore, like Pericot's, is assured of a warm welcome—even though he has written it in Catalan, a language that is hardly well-chosen as a medium whereby to attract wide-spread attention.

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Serra Vilaró's work is certainly a notable achievement in that it is founded entirely upon the author's own researches, and is, in fact, a record of the excavation by him of over a hundred sites in the neighbourhood of Solsona. The rich harvest of archaeological material that has rewarded this tireless field-worker is now installed in the *Museum Archaeologicum Diocesanum* at Solsona, over which Mosen Serra Vilaró presides; and thanks to his labours it now constitutes, as Dr Pericot has rightly observed, one of the few really notable collections of neolithic and aeneolithic material in western Europe. Much, therefore, is to be expected of the book describing the results of Mosen Serra's long series of excavations, and it is characteristic of the author that he has spared himself no pains in order to present his matter in a workmanlike fashion. It was difficult and unnecessary to maintain the luxurious standard of the same author's *Escornalbau Prehistòric* with its sumptuous photogravures; but, if the present work is dressed more modestly, at any rate, plans, diagrams, and drawings are plentiful and excellent; and, though perhaps not all of the photographs deserved reproduction, there is a liberal number of half-tone pictures to complete a total of no less than 470 illustrations. Moreover, the printing and the quality of the paper are alike admirable.

The greater part of the text is, of course, descriptive, but the author has certain decided views that he expresses succinctly in a few introductory pages. It is wrong, he maintains, to distinguish (as do Professor Bosch Gimpera and his colleagues) between a megalithic culture and a cist-culture, and for Serra Vilaró Bosch's aeneolithic 'cists' are neolithic 'megaliths'. But as nobody yet has defined a cist to his satisfaction, he drops the term as a tomb-category, and presents an honest, but excessively cumbrous, system of five classes of his own defining. This, be it said, is the proper and scientific procedure in regional survey; but its effect is inevitably that it adds to the existing confusion. And—on this same subject of megalithic classification and nomenclature—it must be regretfully recorded that Serra Vilaró stands forth as champion of the term 'hemi- or semi-dolmen', an abominable hybrid that should be ruthlessly expunged, even if the name were an archaeologically accurate description of the structures concerned.

It is interesting to note that Mosen Serra Vilaró contests Dr Pericot's statement that there are no carvings on the Catalan megaliths, though the examples our author adduces are not wholly convincing. In general, however, his tombs and their contents, rich and varied though these be, have not presented any notable peculiarities; but the trepanned skull from Clarà, here very well published, will be new to most students; and one of the special interests of the tomb-furniture is the frequent occurrence of the little trapezoidal flints that are all excellently illustrated in this most praiseworthy book.

T. D. KENDRICK.

DIE STRASSE VON GIBRALTAR. Von Dr OTTO JESSEN mit einem Beitrag von Dr A. SCHULTEN, mit 23 textbildern, 16 tafeln und 2 karten. Berlin: Deitrich Reimer. 1927. pp. 294. 18 marka.

In this suggestive and well-documented book Dr Jessen discusses the Straits of Gibraltar under every aspect from the geological and hydrographical to the political and strategical, and for all periods from their birth at the beginning of the Pliocene down to the signature of the Statute of Tangier in 1923. He does not indeed follow Staub in seeing the Straits already foreshadowed in the relatively unimportant arm of the sea into which Tethys narrowed westwards, nor does he point out that the two

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main tectonic directions at the Straits appear first in the south-west of Europe long before the commencement of the Alpine movements; but for the tertiary portion of the embryonic phase, and then from the Pliocene onwards, the record is as complete as limitations of space will permit. It is of course not uniform in value, but the average is reasonably high.

Among the geological questions discussed that of the 'land-bridge' at the western end of the Mediterranean has the widest implications in other sciences. No one will be surprised, of course, to read that from the end of the Oligocene onwards there was no unbroken land connexion between the European and African continents proper, the area lying between the Sierra Morena and the Moroccan Meseta (now divided between the continents by the Straits of Gibraltar) having belonged first to the African side, while the north Baetic Channel remained open, and then to the European, while the Atlantic communicated with the Mediterranean by the south Riffian Strait (now followed by the railway from Rabat to the Algerian frontier). That is the accepted sequence at least, but Dr Jessen's date for the closing of the former channel implies an overlap in time of the two channels, and a consequent island-phase for the area mentioned, for which he gives no authority. Perhaps he has merely made a slip.

The surprise to most people will be to learn that, according to the evidence of the fossil fauna, the opening at Gibraltar was closed again at the culmination in early pleistocene time of the positive epirogenetic movement which began late in the pliocene epoch. If this is established, the fact is important, not merely in itself, but also as indicating the amplitude of the movements in the early Pleistocene. The submarine sill which crosses the entrance to the Straits between Tangier and Bolonia is now covered by water to a depth of 320 metres and the sea-floor falls steeply away from the sill on both sides; if the sill was above the surface at the end of the upward movement, and if the marine conglomerates which marked the sea-level at the beginning of the movement are correctly identified at 233 metres above the present sea-level, the total rise of the land during this epirogenetic movement must have been at least 550 metres. The calculation depends of course on the unfounded assumption that the relative position of the sill with respect to the mainland has not altered; moreover the marine conglomerate is not identified beyond dispute above 140 metres; still, even discounted in this way, the figures indicate movements of great amplitude with correspondingly large changes in the configuration of the straits.

Readers of Dr Jessen's earlier work on south-west Andalusia will probably find the movements now described hard to reconcile with those which he has described before. For an area further west, Dr Jessen has already thrown doubt on his earlier results by invoking (*Zeitschrift der Gesellschaft f. Erdkunde zu Berlin*, 1925), a new negative movement (previously rejected by himself) lasting until the beginning of the Christian era, in the later stages of which the ruins of Tartessus were carried down possibly out of reach of the spade. He must not be surprised if his readers complain at being left to reconcile such discrepancies as best they can.

Professor Schulten's catalogue of references to the Straits by classical writers is exhaustive and should be found convenient. The three Calpes—Calpe-Kirpe, Calpe-Ifach and Calpe-Gibraltar—form in his view a derived sequence in that order.

Surely Professor Schulten is unfair to Carpenter in his second footnote on p. 195. In the discussion of Calpe-Ifach=Hemerokopeium in *The Greeks in Spain* Carpenter had already (p. 120) dealt with the point about Sertorius raised by Professor Schulten.

R. AITKEN.

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HOMER'S ITHACA: A VINDICATION of TRADITION. By SIR RENNELL RODD. Edward Arnold and Co. 1927. pp. 160. 6s.

This book, written in refutation of Dörpfeld's theory that the Ithaka of Homer is Leukas or Santa Maura, will be welcome to those interested for two reasons, first, because so little has been written on the subject in this country, and secondly, because it presents the result of a much needed autopsy of Thiaki by one who has intimate knowledge of the west of Greece.

Some years ago a scholar affirmed that no Ithakan site in the *Odyssey* could be identified, and a participant in the controversy thereupon suggested that a formal statement might be made afresh of the weak points in the case for Thiaki, but none has appeared. Instead, we have the present treatise, the author of which is satisfied that 'the poet refers to natural features which can be precisely identified, and to places which there is no difficulty in identifying'.

In a short statement it was not possible for the author to include all the points that have arisen in the copious literature of 'Leukas-Ithaka', but the chief issues are dealt with clearly and fairly. The discussion of the famous passage early in the ninth *Odyssey* is particularly good, and there is an elucidation, of greater value than the author's modesty will admit, of the well known question put to newcomers to Ithaka.

The points to which objection will be taken by many are the assumed lateness of the Catalogue of the Ships in the *Iliad*, and the whereabouts of Dulichium. For the former Sir Rennell follows Dr Leaf in *Homer and History*, but the new and startling propositions regarding the Homeric geography contained in that book have all been fairly met and disposed of, and Mr Allen's work on the Catalogue, supplemented by a very valuable paper by Mr M. S. Thompson in *Liverpool Annals*, vol. iv, has satisfied many that the evil character affixed to the old Gazetteer by German criticism is really groundless. For Dulichium, Sir Rennell only mentions, apparently as deserving no more than mention, the view that it is Leukas. But there is much to be said for it, and much has been said. It was propounded by Bunbury, elaborated by Mr Allen, and had the adhesion of the late Dr Bury. There is really no conflict on the point between the *Odyssey* and the *Iliad*. Sir Rennell appears to endorse the erroneous view that Homer makes Dulichium part of the Ithakan realm. And again, he accepts Akastos as king of Dulichium. But there is good reason for believing that he is a man of straw, like the Kastor of another feigned tale in the poem.

But the book is very acceptable. The Homeric geography has become of the first importance for Greek prehistory, and it is refreshing to find a competent and impartial observer asserting its accuracy, arguing from that to personal knowledge on the poet's part, and even venturing to accept as well founded the ancient tradition that Homer had sojourned in Ithaka. With many other authorities in these days he regards tradition as 'one of the most valuable of historic guides'.

A. SHEWAN.

MUSEUMS AND NATIONAL LIFE. By SIR FREDERIC GEORGE KENYON, M.A., D.LITT., G.B.E., K.C.B., Director and Chief Librarian, British Museum. The Romanes Lecture delivered in the Sheldonian Theatre, 17 June 1927. Oxford: the Clarendon Press. 2s.

Seldom perhaps has an authoritative pronouncement on museums been made at a more opportune time than that contained in Sir Frederic Kenyon's Romanes lecture,

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delivered at Oxford. It came at the psychological moment, which marked not only the investigations of the Carnegie Trustees into provincial museums, but also the formation of the Royal Commission on national museums and art galleries of England and Scotland. Doubtless both these bodies will study the lecture and mark well its contents.

Not only was the moment well chosen, but the man also, for in Sir Frederic Kenyon we have, not a specialist engaged in a single line of studious investigation, but a wide-minded administrator who claims with all authority to have been engaged for years in facilitating the work of others, rather than in conducting research of his own. He has been the means by which students have attained their results, and his outlook is therefore detached and untrammelled by anything save the general advancement of museum work. He stands in the museum gallery, an unseen spectator, and notes the trend of public taste. He recognizes the claim of the student, as well as that of the mere visitor who comes to the museum to gratify his intellectual curiosity, and it must be said that he has at the British Museum succeeded admirably in serving these two masters.

As a result of personal observation he has come to very definite conclusions; he recognizes that 'collecting' is a national habit, and notes, what is so seldom realized by the public, that most if not all of our English museums owe their existence in the first place to individual collectors, rather than to public enterprise. He notes, as well he may, the growing masses of material absorbed into museums, and the gradual digestion that follows as that material is dealt with. And having done this he propounds two crucial questions—'What is the proper function of the Museum in National Life? What can the Museum do for the community; and if this function is to be performed what must the community do for the Museum?' His answer to the main question is that the museum must serve the student and the non-specialist, 'from an archbishop to an errand boy'; few will quarrel with so comprehensive a reply.

He elaborates the functions of the museum from every point of view, and concludes that museums exist to supply the 'human need of quality in life as well as quantity'; that they appeal to and stimulate the sense of beauty, the sense of curiosity, and the sense of continuity; and that their ultimate purpose is to help the Nation 'to save its soul'.

There is no doubt but that the public at large has of late years responded to the appeal of the museum; and this response is without doubt the first fruits of the national expenditure on education. But the collective attitude of public bodies towards museums lags behind; the country does not realize the services rendered by its museums, and it is still content to rely upon private initiative, rather than give full official recognition. How differently this problem has been handled by France, where the great Napoleon was accompanied to Egypt (and elsewhere) by his staff of *savants*, who thus laid the foundations of the magnificent museums of that country.

Today the public is awake to the value of museums, the demand grows for more facilities, longer hours of opening, guide lectures, and official publications. Are the corporate bodies still to remain inert, and still rely upon private benefactions to keep their museums efficient, as they have done in the past? They must realize, and that soon, that education is not merely an affair of schools and universities for the young, but a life-long process, in which the museum plays a most important part in a healthy national life.

FRANK STEVENS.

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THE NORTHERN HEGAZ ; ARABIA DESERTA. By ALOIS MUSIL. American Geographical Society, Oriental Studies and Explorations, vols. 1 and 2. New York. 1926, 1927.

In these two volumes the author, already well known as a traveller in Arabia, gives a record of further journeys undertaken between the years 1909 and 1915; the work of exploration was financed by the Czech Academy of Sciences and Arts, the publication of its results by the American Geographical Society. Three more volumes are in preparation.

Dr Musil describes his work as a topographical itinerary, but it is much more than that. An itinerary it is, recorded with a meticulous precision which takes account of every minute; the country through which the writer went is described in a manner eminently readable and interesting. It is not inspired, perhaps, but it is accurate without being dull and gives an excellent idea of the desert. What stands out most in the book, both in matter and in style, is the account of the desert tribes and of the individual tribesmen. Dr Musil's long sojourn in Arabia and his friendship with some of the leading sheikhs enables him to speak with authority on politics and on personalities, but he speaks also with sympathy and understanding and his picture is as vivid as it is sane; his records of talks on the march or under the black tents at night, his sketches of tribal history and of tribal chiefs, are romantic because they are so obviously true and not because they are imaginative. There is no idealizing here. 'Awde abu Tajeh, the Roland of writers more picturesque, tears the heart out of a wounded enemy and eats it, and we have the real Bedouin. An-Nuri eben Sa'lan appears as he is, attractive but shift, cruel, and with no concern but for his own interests, frank, generous and dirty. To our knowledge of the Arab this book is a remarkable contribution.

For the archaeologist it is of unequal value. On the one hand there are the descriptions of ancient sites, and here he is likely to be disappointed. The desert is not particularly rich in ancient remains, but what there are are treated by Musil very summarily. Generally there is little or no account of the ruins and nothing to establish their identity; it is tantalizing to read that 'we passed within a mile or so of such and such a Roman fort'—and no more. On the other hand the mention of an old building may be accompanied by a footnote containing a list of references to it by Arab writers which is of very real interest. In two appendices we get compilations of references in Assyrian and classical texts which amount to an ancient history of the desert, and for this the author deserves hearty thanks. The theoretical side of Musil's archaeology is less satisfactory. His views on the identification of biblical sites are unorthodox, and for all his knowledge of the country are far from being convincing. He states his own views without attempting to confute those of others, for which just as much can be and has been said, and he is by no means critical in his choice of arguments; thus his startling thesis that Kadesh Barnea is Petra, this entailing a new route for the Exodus, is supported by the assumption that the 'Sea of Reeds' is the Red Sea as we know it—surely an exploded belief; and that the Exodus took place in the fifteenth century B.C.—which many would disallow; and by the fact that Petra lay outside the 'Sur' or line of Egyptian outposts, which is equally true of other sites with which Kadesh Barnea has been identified.

The maps are excellent. Working single-handed over a very large area the author was obliged to rely in part on native reports, but these he has checked with all possible care, and the main features are based on his own triangulations; while

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therefore they cannot claim to be the last word in Arabian topography they do supply an invaluable addition to it.

C. LEONARD WOOLLEY.

THE PAINTED POTTERY OF SUSA. By C. LEONARD WOOLLEY. Journ. Royal Asiatic Society, 1928.

Susa is generally taken as the starting point for the study of an immense and profoundly important province of prehistoric culture, extending from the Euphrates to the Indus and Turkestan. The old Elamite capital, situated as it is on the borderland between plain and plateau, is well adapted to provide a key to the interrelations of two of the world's oldest civilizations. But unfortunately the record of the excavation is atrociously bad. It must be remembered that the Germans at Assur and then Campbell Thompson at Abu-Shahrain were the first excavators in Mesopotamia to look at anything beside artistic and literary documents. The two oldest settlements were alleged to be each characterized by fine painted wares, described as the first and second styles respectively. The first style is known almost exclusively from funerary vases found in a cemetery attributed to Susa I; it exhibits most suggestive similarities to the oldest 'prehistoric' pottery unearthed far beneath the dynastic ruins of Ur and its suburb al'Ubaid and to sherds from Seistan and even India. According to a recent work by Dr Frankfort the first Susian pottery represents some of the earliest efforts of mankind at pot-making and is the oldest member of the group. The second style on the other hand marks, on the same authority, a break with the old traditions only explicable in ethnic terms by the intrusion of new folk from North Syria.

Now the excavator of Ur argues that the two styles not only belong to the same school, but are actually contemporary, and both posterior to the prehistoric wares of Sumer. The aesthetic differences between the first and second styles are dismissed as too 'subjective' or explained as 'archaisms'; the technical ones would result from the contrast between funerary and domestic ware. In any case Frankfort's contention that the first style vases were the first products of a new craft are shown to be untenable. Then Woolley points out that in the 'section' of the mound given by de Morgan the graves containing first style vases are depicted not in the ground on which the first settlement stood, but on the same level as its ruins. Hence, *if de Morgan's section is to be taken quite literally*, the graves are dug in the ground on which Susa II stood and belong to that city, in whose ruins the vases of the second style were found. So the two styles co-existed. Moreover Susa II is dated to the first half of the third millennium; the prehistoric village near Ur is at least five hundred years older. Hence the prehistoric painted pottery and the civilization it represents spread from Sumer to the highlands, not *vice versa*.

Revolutionary though Mr Woolley's thesis be, it certainly removes some difficulties and might be supported out of Dr Frankfort's own mouth (two sherds of his 'Susa II' style among the 'late Susa I'—material from Seistan and a pot of 'Susa I' form from the 'Susa II' cemetery of Jemdet Nasr near Kish). Yet it is by no means such an universal panacea as its author claims. However much we may distrust stylistic criteria, a very real contrast exists between the pottery from the graves and that from the second settlement at Susa in the treatment of animal forms. Can deliberate archaism on the part of the painter of funerary vases really explain these as Woolley suggests? Only if we assume a stage of industrial specialization not warranted by the remaining grave-goods. The same village potter

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will not paint a cubist and an impressionist goat. Finally recent excavations in a new quarter at the mound of Susa have brought to light a cemetery really containing Second Style vases while sherds of the First Style were found in hut ruins, not tombs, at a lower level, (*Rev. Arch.*, 1926, xxiii, p. 16). In copying he might reproduce a pair of triangles, but not a pair of triangles that vividly simulate a goat, as they do on well executed first style vases. This and other difficulties have still to be surmounted before the theory of contemporaneity can be readily accepted. But in any case Mr Woolley's analysis is a salutary warning against too facile an acceptance of Dr Frankfort's brilliant deductions and yet another sad reminder of the uselessness of the reports furnished by the *Délégation en Perse*.
V. G. CHILDE.

THE STORY OF MYTHS. E. E. KELLETT. Kegan, Paul, Trench, Trubner and Co. 1927. pp. 275. 7s. 6d.

We gather from the introduction that this book is intended mainly for students in training colleges. The hope is expressed there that it will induce students to read more widely in the subject. It seems a pity, therefore, that the book contains no classified bibliography for the student who is inspired by it to go on studying the problem. It is evidently based on wide reading, but it seems to have been written under the influence of the school which was still inclined to see in all folk-tales a nature-myth. The reference to the story of Cain and Abel omits any reference to its undoubted foundation in the age-long strife between the cultivator and the herder, a strife which is of the utmost social importance in studying the history of human relations. The question as to whether Cain may have said something so idolatrous that the Jewish editor cut it out, seems relatively unimportant. On the whole, the book is fairly free from slips. A notable omission in references to works that elucidate the background of the Old Testament is Robertson Smith's *Religion of the Semites*. In the chapter on myths of birth and death no mention is made of what is perhaps one of the most poignant myths of all—the story of Etana and the Eagle, which shows that from very early times man was puzzled by the pain and suffering which attend birth. Again, the relation of the Babylonian legend Ishtar to the later story of Persephone is not clearly brought out. The book, however, though not a comprehensive account of the whole story of myth is at any rate full of suggestions, and will, we hope, induce many teachers to take a wider view of the background of the stories which they use in their work.
R. M. FLEMING.

LIMES SAXONIAE. VON HERMANN HOFMEISTER. Sonderabdruck aus Band 56 der Zeitschrift der Gesellschaft für Schleswig-Holsteinische Geschichte. pp. 67-169 and 11 figs., 2 maps. Kiel: Vollbehr und Riepen. 1926.

About 1075 Adam of Bremen described the course of a Carolingian frontier, called *Limes Saxoniae* and drawn from the Elbe to the Baltic, north of Lubeck and south of Hamburg. In this description Germanic and Slavonic place-names are used, but nothing is said of the form of the frontier. A rich but not especially useful literature has grown up round the subject, and Dr Hofmeister sums up the whole question, and puts forward views of his own. He is notably successful in identifying ten out of the sixteen relevant place-names, and the line of the frontier is established along the rivers Delvenau, Trave, and Schwentine.

It is a frontier depending upon natural features for its definition, like some of the

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early Roman frontiers, to which also the description of the whole scheme as a Mark applies, borrowed from G. Maitz: 'Die eigentliche Mark war ein ursprünglich nicht zum Reich gehöriges, den Nachbarn abgewonnenes Gebiet, das durch Anlage fester Plätze, Aufstellung militärischer Posten und anderes besonders geschützt war und dem eigentlichen Reichsboden als Vorhut diente'. We can even detect echoes of the Roman world: 'Sclaomir Abodritorum rex . . . per praefectos Saxonici limitis et legatos imperatoris, qui exercitui praerant Aquasgrani adductus est'. This happened in 818, when the *Limes* is mentioned for the first time, and by Einhardt. But it sounds little different from Jornandes or even Marcellinus. It would therefore be a matter of the greatest interest to know more about the organization and character of this frontier boundary.

But nothing is known for certain, although Dr Hofmeister has a working hypothesis. He suggests that it was protected with little earthworks, not so unlike the earliest posts along the line of Hadrian's Wall. Along the southern end of the *Limes* are three similar fortifications: Ertheneburg, Sirksfelde, and Nütschau; and there is one more on the north bank of the Elbe, at Hoheburg bei Schiffbek. If the dating of this series of earthworks is right, Itzehoe, on the north bank further down the river, founded by Charlemagne in 810, is yet another. As a working hypothesis the suggestion that these are all the small posts of frontier-guards commends itself, especially to the student of Roman frontiers. But there are some serious drawbacks in its statement which cannot be left unmentioned. Really adequate plans of the earthworks are lacking; and until they have been prepared, with the aid of excavation, it is premature to say that the resemblance is real. Small enclosures of any age have a tendency to look much alike when Time has dealt hardly with them. A further and more serious fact is that Sirksfelde and Nütschau have been trenched by Schuchhardt (not to mention Hoheburg bei Schiffbek). These excavations produced pottery, and it is not too much to say that Dr Hofmeister differs ungracefully with Schuchhardt over the dating and character of this ware. For Schuchhardt it is Slavic, and early Slavic too; for Hofmeister it is Franco-Carolingian. But until Dr Hofmeister illustrates this pottery, and produces a representative picture thereof, from which the reader can judge the question for himself, this argument does not rise above the level of a polemic. It would have paid our author, in fact, to reduce his text and to increase his illustrations. Here it may be noted that figures 8, 9, 10 and 11 are almost useless owing to extreme reduction.

If the treatise is meant to revive interest in this frontier, and to promote a scientific exploration of its remains, then one would wish it success. Obviously, a thorough exploration of the sites indicated by Dr Hofmeister is now required, and the possibilities are fascinating. It ought not to be difficult in 1927 to settle the question of the similarity of three well-known sites; but until it is done, with that thoroughness in *Limesforschung* associated with German archaeology, the outside world may suspend judgment on the question of the organization and detailed character of the *Limes Saxoniae*.

I. A. RICHMOND.

NATIONAL ANCIENT MONUMENTS YEAR BOOK. Edited by JOHN SWARBRICK. Wykeham Press. 1927. 3s. 6d.

This is a most useful and valuable book of reference, containing a large amount of information relating to ancient monuments and the Societies interested in them. There is a list, arranged under counties, of monuments scheduled; and interesting

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articles on 'The Preservation of Ancient Cottages' (by Sir Frank Baines), 'The Death-watch Beetle, and how to deal with it', 'Underpinning' and so forth. We feel sure that a handbook of this kind would be found useful by the secretaries of all archaeological societies, and, considering the very low price at which it is published, it deserves to be supported by the public at large.

EGYPTIAN PAPYRI AND PAPYRUS-HUNTING. By JAMES BAIKIE, F.R.A.S.
Religious Tract Society, 4 Bouverie Street. 1925. pp. 324 and 32 plates.
ros. 6d.

Mr James Baikie has provided a pleasant and popularly written book for those who do not seek a knowledge of Papyri first-hand. It does not pretend to be more than a compilation from many sources. Mr Baikie himself is so modest and disarming in his preface that he almost proclaims the danger of his system. Inevitably such books tend to select, and so to give undue importance to, the picturesque or exciting. Material of this kind it is easy enough to gather from the vast field of Papyri which are available but the historical perspective which results from such selection may be no more than the cumulative perspective of let us say the better Sunday papers of our own time.
JOHN JOHNSON.

MOUSEION. Bulletin de l'Office Internationale des Musées. Institute de Co-operation Intellectuelle de la Société des Nations. (Les Presses Universitaires de France). No. 1. Avril 1927. 10 francs.

The League of Nations has done well to include museums in the extended purview of its activities, and *Mouseion* is the official organ of that particular branch of investigation.

There can be but little doubt that the existence of a central Information Bureau dealing with all museums is long overdue, and the present effort is therefore warmly to be commended. But the current number of *Mouseion* confines itself almost exclusively to the art museum, and the fine arts. It is to be hoped that future numbers may have something to say on the subject of archaeology, for in this particular branch of museum work co-operation between continental museums with those in this country is specially desirable. All museums, even those in small centres, have an international significance in solving the riddles of the past, and the better they are linked together the more efficient they will become to the student, and the more attractive to the general public.

Though the general question of mutual co-operation is apparently simple enough, it still presents difficulties. It is apt to be complicated by the abundance of suggestions, and by the rival claims of the student and of the general public, each demanding different treatment. But when allowance has been made for these factors, certain central facts emerge, which must certainly commend themselves to all Directors of museums.

The first is the establishment of a central office, which would preserve a definite series of photographic records, or better still of negatives from which prints could be taken for the student. Such a bureau likewise would render good service as a clearing house for *bona fide* duplicates. Even more advantageous however than the exchange of duplicates would be the exchange of ideas in such matters as policy, preservation, and museum methods generally. Another feature proposed is the 'adoption' of

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small museums by larger ones in the same district, the 'big brother' principle applied to museums. Such a movement is already on foot in this country, in the proposed federation of the Lancashire and Cheshire museums. Other matters under consideration are the publication of popular guides, summaries of collections, and scientific catalogues.

In addition to papers dealing with the above questions there are articles on the art galleries of Budapest, Brussels, and of the museum of Comparative Sculpture at the Trocadero in Paris, together with an instalment of a general directory of museums, and notes and reviews.

FRANK STEVENS.

PROCEEDINGS OF THE PREHISTORIC SOCIETY OF EAST ANGLIA.

Vol. v, part 2. 1926. 10s.

By far the most important paper in this number is the exceedingly clear and well written presidential address of Mr A. L. Armstrong on the problem of Grim's Graves. He concludes that the mining industry there extended over a 'long series of periods', beginning with a 'Northfleet' industry and terminating during the early neolithic period. He recognizes the following phases:—a phase of shallow trenching in the valley; the 'primitive pits'; the floor covering the primitive pits, which he equates with the Campignian culture; an 'intermediate pit' phase; and finally the large deep pits on the south-east border of the area, which cut through old floors. Incidentally he demolishes the theory that patination alone is any criterion of date. In a paper on the silted-up lake of Hoxne and its implements, Mr Reid Moir describes a glacial deposit 6½ feet in depth which overlies an 8 feet layer of brickearth, in the lower part of which Mousterian implements were found. Beneath this was a stratum of gravel containing late Acheulean implements. Mr Reid Moir also describes some further excavations in Boulton and Paul's brickyard at Ipswich, and the discovery of remains of wooden shelters which he places in the earlier period of upper palaeolithic times. Mr Sainty and Professor Boswell give an account of the Acheulean workshop site at Whitlingham near Norwich and bring forward evidence in favour of an advance of ice at the end of the Chellean period and before the full development of the true Acheulean culture.

R. C. C. CLAY.

AKHNATON, KING OF EGYPT. By DMITRI MEREZHKOVSKY. Translated from the Russian by NATALIE A. DUDDINGTON. Dent and Sons. 1927. pp. 372. 7s. 6d.

It does not seem likely that the trilogy of historical novels of which this is the second volume will equal the merit of M. Merezhkovsky's previous work. There is for instance nothing in it to equal the extraordinary brilliance of his *Leonardo da Vinci* with its vivid picture of Renaissance Italy. It is true that there is plenty, almost too much, local colour, but a quantity of archaeological detail is not enough. The fact is that Akhnaton and his Egypt are so remote in time and so alien in spirit from us today that a book of this kind can hardly hope to succeed. It has nevertheless considerable intrinsic merit, and there are passages in it which still allow us to hope for a really fine novel from its author some day. Meanwhile, for the novel-reader with a taste for the ancient and unable or unwilling to go to more prosaic sources, this volume will give some notion of the life and times of the extraordinary person after whom it is named.

E. G. WITHERCOMBE.

Antiquity

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JUNE 1928

Editorial Notes

SOON after this number appears the Ur Exhibition will be open. The objects from the Royal Tombs will be on view for several months at the British Museum. Then some of the exhibits will go to America and some will return to Baghdad. The division of spoils takes place at the end of each season. The British representative of Iraq selects what he wants for the Baghdad Museum, and the rest is divided between the British Museum and the Museum of the University of Pennsylvania, which finds half the money for the excavations. Most of the objects, however, need expert treatment before they can be exhibited at all; and since this cannot be done in Baghdad, they are sent to the British Museum for this purpose. Consequently, when the exhibition is closed, the finds will never again be seen together in one room. Many of the finest objects are, at the time of writing, unpublished, and some are still 'in hospital'. At a recent meeting of the Society of Antiquaries, pictures of the best were thrown on the screen by Mr Leonard Woolley, with dramatic effect. The gold bulls' heads and the inlays astonished us with their naturalism; the style is mature and plainly ancestral to the conventionalized designs of later dynastic times which have long been known from engraved seals. The technical skill displayed demands a prolonged antecedent period for its development.

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The year 1928 will be remembered not only for Mr Woolley's discoveries, but also in a different way for the publication of the second volume of Sir Arthur Evans's *Palace of Minos*. A concluding volume has yet to appear and thus set the coping-stone on a really great achievement. Throughout the life-time of some of us Sir Arthur Evans has devoted himself and his resources unsparingly to the service of archaeology. With a flair for discovery and for correct diagnosis, he first found and then bought and excavated the site of Knossos. New civilizations and new phases of art were revealed, both standing in the direct line of descent of European culture. Reading Sir Arthur's account one rejoices that the man, the place and the circumstances were so happily conjoined. The book is a masterpiece of which British scholars may well feel proud. Indeed, we may congratulate ourselves upon the work of British archaeologists in the near East, in Iraq and in India. The recent epoch-making discoveries in all three countries have been due to British, or British and American, enterprise; and the published record is evidence of the thoroughly sound methods employed.



In other departments of archaeology we have led the way. Britain is the only country that marks ancient remains in plan on its large-scale maps, and as a result the study of earthworks is a peculiarly British subject. (As a matter of fact few foreign countries mark any antiquities at all on any of their maps, unless these are so large that it is unnecessary. There are practically none on the French 1:80,000 map, which corresponds roughly to our 1-inch-to-mile Ordnance Map). The absence of cadastral maps handicaps the student of earthworks. Not everyone has the time or the skill necessary for making his own plans—rather a long business before air-photography was invented. But anyone with a little elementary knowledge of surveying can use a plan, on the scale of 25 inches or 6 inches to the mile, to illustrate his account of a camp or group of barrows, or to record the exact position of new discoveries. A landmark was the foundation in 1901 of the Earthworks Committee of the Congress of Archaeological Societies. One result of the Committee's printed propaganda was the publication of several good books on the earthworks of certain districts. Another was the preservation of some earthworks which would otherwise have been destroyed. The inclusion of special chapters on Ancient Earthworks in the volumes of the Victoria County History—itsself a notable landmark dating from 1900—was a symptom of the growing interest in open-air studies.

EDITORIAL NOTES

The cumulative result of all this work is a mass of reliable information, as yet undigested. The process of observation and record began with Camden in the 16th century, but it acquired great impetus during the 19th century from the formation of local societies. It is easy to disparage the work of such societies, but we should be the poorer had they not existed—witness the footnotes in Rice Holmes' *Ancient Britain*. The facts recorded in their transactions are the raw materials of synthesis, and the time is ripe for coordinating them.

A distribution-map is itself a synthetic product, revealing much that is new. It brings out the regions which have been the centres of population in the past; and comparison with a soil-map generally suggests the controlling factors. That is true today, when the areas of densest population coincide with the coal-fields; but it was equally true in prehistoric times when the densest population was usually in limestone regions. It is remarkable how constant this coincidence is. Certain regions which may broadly be described as the Cotswolds, the Middle Thames region, the chalk uplands of Wessex, the carboniferous limestone area of Somerset, and favoured portions of the North and South Downs were thickly inhabited in several successive periods. Others were, apparently, inhabited in some and in others deserted or traversed by nomad hunters only. These facts can only be accurately determined by means of carefully compiled maps of each period, and until they have been completed and published our knowledge must remain shadowy.

The objects whose distribution provides the clue may vary in size from a hill-top camp of several acres to a Roman villa, or a barrow only a few feet across. A very large number of these sites are of course already marked on the Ordnance Maps; but many are not. Moreover, of those which are marked the true character may be unknown. A little reflection will show that this must necessarily be so. The diagnosis, so to speak, of an ancient site is a matter requiring knowledge and experience; the number of such sites is legion, and the number of persons who are even interested in such is limited. Yet there is no more fascinating pursuit than field-archaeology. To add a new site to the map or confirm a doubtful one by mere inspection, is to add a brick to the temple of knowledge; the satisfaction of one such discovery is equal to that of the collector who acquires a new specimen, and it is perhaps more lasting.

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The game begins usually at home, with the encounter of an allusion in some obscure article or in the diary of some long-departed antiquary. A ramble with an Ordnance Map on the next fine day, guided by his description—often, alas! deplorably vague—and by reference to a good contemporary map, if vanished names are used, will often result in rediscovery. It is extraordinary how even important sites well-known in their day fall sometimes into complete oblivion. Two Roman villas near Maidenhead—at Feens and Berry Grove—are frequently referred to in Hearne's diary. He visited them constantly and dug in them. Yet the sites of both were completely forgotten. One has recently been rediscovered, by three people, all searching quite independently. The other is still lost, but is being looked for. There are many similar examples to be found all over the country. The sites of Roman houses are often quite easy to identify, from the broken tiles, pottery, tesserae and such like lying on the surface. (The Feens villa was thus located). Barrows are often so large and obvious that no doubt is possible; though there are of course traps to beware of. Skill comes with practice only; it cannot be taught.

Work of this kind is as valuable as excavation. It is the necessary preliminary to the study of a region; as it develops there arise problems as fascinating as those of any detective story. No elaborate equipment is required—nothing but a 6-inch map of the district and a severely critical attitude of mind. Books are consulted and read for the facts they supply, not for the opinions of their authors. Knowledge is acquired at first hand, from facts.

We continue to receive most encouraging letters from our readers, and we wish once more to thank them for their support and to assure them that their good wishes are deeply appreciated. The success of our undertaking has been assured from the start, and the renewal of the vast majority of subscriptions relieves us of anxiety for the immediate future. But of course the larger our circulation, the more we can spend on each number, and the more illustrations and maps we can provide. These are very expensive, both to prepare and to reproduce. Subscribers could help us enormously by interesting their friends in ANTIQUITY, as we know several have already done. We should of course be only too glad to assist them by sending leaflets to any who may care to have them for distribution.

PLATE I

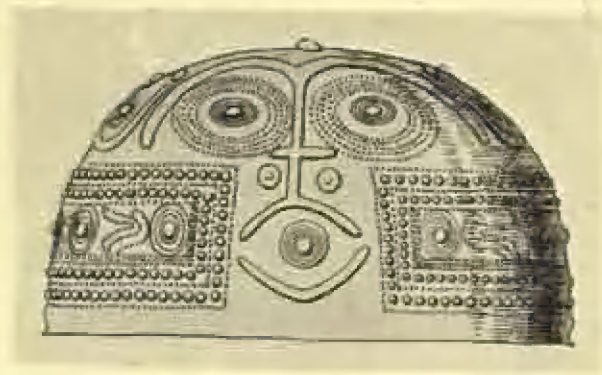


FIG. 1. BRONZE HELMET WITH REPOUSSÉ ORNAMENT

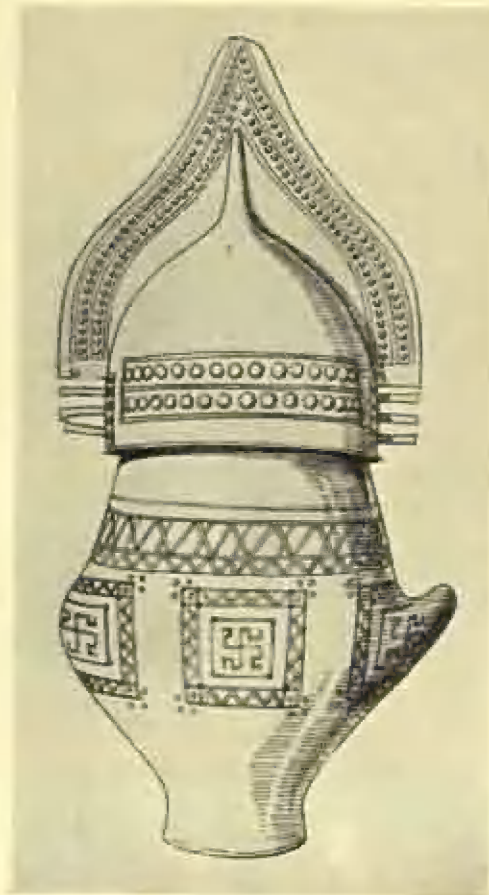


FIG. 2. POTTERY OSSUARY COVERED WITH BRONZE HELMET
By permission from *Mafler's "Villanovans and Early Etruscans"*

Forerunners of the Romans. II.

by D. RANDALL-MACIVER

AT the date of about 1000 B.C., that is to say a little after the beginning of the Iron Age and two centuries before any effective colonization by the Etruscans coming from Asia Minor, northern and central Italy may be partitioned into five distinct spheres of civilization. For convenience of treatment I shall assume that each of these spheres represents a comparatively homogeneous people, passing over the question whether there may not have been submerged minorities of some local importance. And I shall give each of these five peoples, or nations as they may not unfairly be called, a conventional name of geographic derivation, to avoid the endless and futile controversies as to tribal nomenclature. As the accompanying map therefore will show the north-west is occupied by the Comacines, part of Venetia by the Atestines, the Bolognese region by the northern Villanovans, Tuscany and part of Latium by the southern Villanovans. East of the Apennines, from Rimini to Aufidena, the Adriatic coast and the central Apennines were held by the Picenes, who must be understood for this purpose to include some of the tribes known to history as Samnites in addition to a small number of Umbrians. The first four of these nations were related by more or less close ties of kinship and practised the same burial rite of cremation, but the Picenes were of wholly different origin and used only the rite of inhumation. Of the Ligurians, occasionally mentioned by classical writers as occupying the coast of the Italian Riviera, it is impossible to say anything as they have left no remains by which their civilization in the Iron Age can be judged.

In an earlier article in *ANTIQUITY* (June 1927) I have dealt at length with the Etruscans, and have shown that the immigration of this Oriental people and the civilization which they produced affected pre-Roman Italy more powerfully than any other single factor. Among the forerunners of the Romans the first and far the most important place must be assigned to the Etruscans. Nevertheless the provincial Italian civilizations, which preceded the arrival of this alien people

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and in several parts of the country maintained an independent existence down to the 4th century B.C., were of great importance. I shall now attempt to describe the individual character of these five pre-Etruscan nations, and to estimate how much each of them achieved before the whole country came under the levelling sway of the Romans.

The most direct and also the most important contribution to the general Italian culture of the Early Iron Age was undoubtedly that of the two Villanovan nations. In Etruria the southern Villanovans might be described first as the foster-parents, then as the direct under-studies of the Etruscans, who owed far more to them than has been generally appreciated. It was the Villanovans who were the pioneers of metal-working, and it was largely owing to the presence of so many skilled and experienced coppersmiths among serfs and dependents that the Etruscans were able to achieve their rapid pre-eminence in the copper, bronze, and iron trade of the Mediterranean. We may begin by studying the northern branch of this remarkable people, which settled in the districts centring on modern Bologna.

The northern Villanovans then occupied those provinces on the east side of the Apennines which are comprised under the modern names of Bologna, Faenza, Forlì, and Ravenna. On the north their territory was bounded by the river Reno and on the west by the Panaro. With the exception of an important cemetery at Rimini, virtually all our information about them is derived from the excavation of sites in and around the city of Bologna. Explorations carried on at intervals during the last seventy years have produced an enormous amount of material, which may all be seen in the Museo Civico of Bologna. It has been classified into three periods, named, after the titles of the estates, First Benacci, Second Benacci and Arnoaldi. To delimit these periods in positive terms of actual years is not easy, and there is some disagreement on the subject. I have given my reasons elsewhere for a tentative division which would place the First Benacci at 1050 to 950 B.C., Second Benacci at 950 to 750 or 700 B.C., Arnoaldi at 750 or 700 to 500 B.C. It is universally accepted that the Arnoaldi culture is of very slight importance after 500 B.C., when it dies out and is superseded by the later Etruscan.

During the five hundred years from 1000 to 500 B.C. the northern Villanovans passed through several stages of development, but their progress, as was natural with a people who had very limited foreign trade and little external stimulus, was not rapid or sudden. In the First Benacci period they may be seen as comparatively recent settlers,



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not very long arrived from their original homes on the Danube. Iron was still rare throughout the peninsula, and is exceedingly scarce in the graves of the tenth century. Copper and bronze however were abundant and freely worked. In the manufacture of weapons and implements as well as of personal ornaments the Bolognese demonstrate a facility that must have been gained through many generations of practice. There has been a great advance in expert handling since the Bronze Age though the technical processes are little different. The highest point of achievement is seen in the bronze bits of the horses and the bronze or copper girdles worn by the men. These are not only admirable specimens of handicraft but they are real works of art. The native Italian origin of the girdles is proved, if any proof be needed, by the occurrence of their prototypes among the large fibulae of a Bronze Age hoard. That the centre of production for these objects was north, and not south, of the Apennines seems to be proved by the fact that bronze girdles do not appear in Etruria before the Second Benacci period, when they have passed out of fashion at Bologna. On the other hand the bronze helmets, so distinctive of sites like Corneto, were probably manufactured in Etruria and sometimes traded across the Apennines, inasmuch as a pottery model of one has been found at Rimini.

Pottery-making is a primitive art which does not invariably keep pace with the general culture of any people. At Bologna in the First Benacci the pottery is moderately good; it is hand-made and rather rough, but not lacking in a certain barbaric grace. It is seen at its best in the ossuaries made for holding the cremated ashes of the dead. These are of the distinctive form which has become widely known as the 'Villanovan urn'. Ossuaries and the bowls which cover them are generally decorated with incised geometrical patterns, showing relationship to the geometrical art practised at this time all over Europe; the choice of motives however is singularly restricted, a square macander and a triangle being almost the only alternatives.

The Second Benacci period at Bologna appears as a natural and normal evolution from the First, marked not so much by any abrupt transitions of style or method as by a great increase in wealth and the multiplication of new materials. Iron, so rare in the first period, is now of frequent occurrence, and great progress has been made in the manufacture of bronze. Large ossuaries and situlae were the most important products of this industry, made by the naïve but very effective process of hammering out sheets of copper or bronze, cutting

PLATE II



FIGS. 1-4. DESIGNS ON SITULAE AT ESTE. FIG. 3. THE BENVENUTI SITULA 500 B.C.

FIG. 4. A SITULA OF ABOUT 400 B.C.

By permission from Maciver's "Iron Age in Italy"

PLATE III



BRONZE PENDANTS FROM ASCOLI IN PICENUM
By permission from MacIver's 'Iron Age in Italy'

PLATE IV



10th C. BRONZE FROM TISARO, POSSIBLY REPRESENTING HECTOR AND ACHILLES
OVER THE BODY OF PATROCLUS

By permission from Mackay's "Iron Age in Italy"

PLATE V



FIGS. 1-3. DAUNIAN POTTERY OF 7TH AND 5TH CENTURIES B.C.
FIGS. 4-6. CANOSA POTTERY OF THE HELLENISTIC PERIOD
By permission from Mackay's "Iron Age in Italy"

FORERUNNERS OF THE ROMANS

them to the required shape, and then folding them over and fastening them with rows of large rivets. The rivets are so arranged as to form a decorative pattern on the outside. This is a process peculiar to the Villanovans of both branches and always serves to distinguish their work from that of the Etruscans when the latter appear upon the scene. For the Etruscans were entirely addicted to casting and did not use the technique of hand-hammered plates. It was during the Second Benacci that Bologna finally established itself as the Birmingham of ancient Italy, a position which it never lost but maintained even under the Etruscan domination which spread north of the Apennines about 500 B.C. In the sixth and fifth centuries, it is well known that Bolognese *situlae* were carried even over the passes of the Alps and up the Rhine to Germany, Switzerland, France and England. This was a flourishing export-trade, the beginnings of which may be inferred to be several centuries earlier. In return new models of weapons were imported, for several of the Hallstatt bronze swords with their distinctive antennae-handles have been found at Bologna dating from the eighth and perhaps the ninth century. At the same time beads of glass, paste, and Baltic amber, appear quite abundantly, the last of which is obviously a product of transalpine commerce.

In addition to large bronze vessels the Italian Birmingham produced numerous weapons and implements. Particularly common are the small half-moon blades of bronze which are generally described as razors. These were traded all over Italy and were commonly used even in Venetia, where Este had its own quite independent and very flourishing industry. The general dominance of the interest in metal-work is seen even in the pottery of the Second Benacci in which patterns of openwork and imitation chains moulded in clay are not uncommon. Towards the end of the period the influence of foreign designs may occasionally be detected in the floral motive of a bronze lid or the animal designs moulded on a pottery cup. There is sometimes perhaps a far-away echo from the Dipylonic style of Greece as well as the first beginnings of a tentative zoomorphism derived from the Etruscans.

Leaving for later treatment the Arnoaldi period at Bologna we may now review the development of the southern Villanovans from 1000 to 750 B.C., the date which I have assigned as the end of the Second Benacci, which happens also to coincide with the traditional founding of Rome. More than three centuries before Romulus brought the first nucleus of his rude shepherds and herdsmen together

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into an enclosed settlement on the Palatine, the Villanovans had colonized much of Etruria and a part of northern Latium. Their very earliest settlements were in the mountains of Tolfa, a little north of Rome. Almost contemporary with these were several considerable colonies in the Alban Hills and one small village on the site of Rome itself, all of which were well-established by 1000 B.C. Even at this early date the predecessors of the Romans were quite an advanced people. Models of the houses in which they lived, substantial structures of wattle and daub with posts and roofs of wooden beams, have been found in their tombs. The Romans themselves never built any better houses than these for some centuries, at least after they had founded the city that was to become imperial.

In its general aspect the culture of the southern Villanovans was closely analogous to that of the Bolognese, but there were a good many minor differences of local custom which cannot be enumerated in a summary review. The most salient point with them, as with their northern kinsmen, is the excellence of the metal work. It was probably the knowledge that copper mines existed in Tuscany, and a wealth of iron in the island of Elba, that had directed their steps to this region. No doubt it was from them that the Bolognese and the Venetians obtained most of their raw copper and iron and perhaps a little of the tin, which is not unknown in Tuscany. The southern Villanovans therefore had had every opportunity of developing their arts and crafts, and may very likely have enjoyed the additional advantage of receiving occasional foreign teaching. For it is reasonable to suppose that the permanent settlements of the Etruscans were preceded by some generations of intermittent prospecting, while after 800 B.C. the Etruscan colonies were firmly established in many parts of the coastal region. But if we cannot exclude a certain amount of seaborne influence the importance of this must not be exaggerated; for the perfectly indigenous industries of the Bolognese had reached almost, if not quite, as high a mark as those of the southern Villanovans. The latter indeed seem to have actually imported a considerable quantity of Bolognese products. Moreover the technique of manufacture in Etruria down to the eighth century is predominantly Villanovan and not Etruscan. It is the same process of using hand-hammered plates which has been already described. A masterpiece of this work, dating from the middle of the Second Benacci period, is the bronze helmet used to cover a typical earthenware pottery of the best Villanovan style with geometric ornamentation. It is shown together with its

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ossuary in plate 1 (fig. 2). The decoration consists of rows of engraved bosses in repoussé, separated by rows of finely punctuated dots and by engraved circles at the base of the crest. All this is purely native work, of the same geometric school that has been seen north of the Apennines. A helmet of another design is illustrated in plate 1 (fig. 2). Swords and daggers found on this and similar sites in Etruria are modelled on foreign types, probably derived from Greece, though manufactured locally. The taste for foreign weapons led occasionally to the purchase of Hallstatt antennae-swords, which must have been obtained through the mediation of Bologna and were always very rare in central Italy.

Not so common in Etruria as in the north are large vessels of bronze, but the examples that have been found are very fine and are sometimes so like the Bolognese that they might have been directly borrowed. Flat bronze flasks derived at second or third hand from a well-known Egyptian model, gold bullae, and geometrically painted pottery all show that Aegean trade was beginning to play an important part in the life of the eighth century. During the course of that century the Etruscan gradually won the upper hand so that before 700 B.C. Villanovanism was extinct as an independent civilization south of the Arno. For over two hundred years, from 1000 to 800 B.C., the southern Villanovans existed as a distinct people with a strongly marked individuality, then for a hundred years more they showed themselves brilliant pupils who could retain their own character even while adopting impressions and inspirations from outside. They had raised the level of their country to a high standard before they were finally absorbed by the invaders from Asia Minor, though it must be admitted that theirs was a barbaric culture in comparison with what had been produced at the same time in the Aegean and the Orient.

In Etruria and Latium the history from 750 to 500 B.C. is simply the history of the Etruscans. But the northern Villanovans, sheltered behind their protecting mountains, were neither invaded nor interfered with before 500 B.C., when the Etruscans began their new policy of planting colonies north of the Apennines. For two hundred and fifty years therefore after the foundation of Rome Villanovanism continued to develop on its own lines round Bologna; this is the time which is known as the Arnoaldi period. As compared with the Second Benacci in the same region the Arnoaldi shows a good deal of change, as might be expected from the greatly increased resources and opportunities of commerce. The Bolognese, who had no reason to boycott their new neighbours, continued to trade with Etruria as they had done before

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it came under new masters. It is natural therefore that a few pieces of the finest Etruscan goldwork have been found at Bologna, and that Etruscan motives and patterns may be detected here and there in the work of the native coppersmiths between 700 and 500 B.C. Nevertheless the independence of the Bolognese is more remarkable than their susceptibility to foreign suggestion; the old technique of hand-hammered metal persisted and the fashionable situlae and cylindrical cists were produced by this process in innumerable quantities. Raw materials were much commoner than before; the opening up of the iron-mines in Elba flung on the market an unlimited quantity of iron, of which a great deal found its way over the passes of the Apennines. In other directions the trade was equally brisk and the small ornaments such as fibulae, beads, bracelets and headpins reflect rapid changes of fashion. The important point to be noted however is that the trade was not with Greece; no Greek pottery or other products of the Aegean appear anywhere near Bologna before the end of the sixth century. New methods of pottery-making were employed; the wheel and the stamp came into use. And the old geometrical motives were replaced to a great extent by a rudimentary zoomorphism which produced cursive figures of ducks, or schematic human forms on the pottery. The swastika also appeared, just at the same time that it became rife over a great deal of Italy, probably coming in on a wave of new influences from the other side of the Alps. In general the native life during these two hundred and fifty years was broadened and enriched, but remained exceedingly conservative. The Bolognese of the Arnoaldi time were certainly not stagnating but their progress was very different both in kind and quality from that of their southern kinsmen. On the whole their standard between 700 and 500 B.C. is not so high in the scale of art as that attained by the southern Villanovans as early as 700 B.C. There are some variations of type but few improvements of value. The contribution of the Bolognese to the 'artistic patrimony' of ancient Italy was exhausted by 700 B.C., though their facility in commercial production had not decreased.

Venetia on the other hand has a very different story to tell. Among the Atestines the seventh, sixth and fifth centuries mark the highest point of their curiously individual culture. Before this there is nothing of importance to record, for the idea that there was any 'First Atestine' period corresponding to the 'First Benacci' is an error. Possibly the Atestines were actually the last of the cremating nations to settle in Italy; in any case there is little more than a hint of their presence

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before a time equivalent to the 'Second Benacci'. When they first come under observation, about 900 B.C., it is at once evident that the Atestines were originally very closely related to all the Villanovans, and kept up a close intercourse with them. Not only the burial-rites but the details of tomb-construction are identical at Este and Bologna. And in many respects the contents of the graves are almost interchangeable; there are the same types of weapons and implements, the same varieties of fibulae, bracelets, necklaces and other ornaments at Este and at Bologna for a couple of centuries. At first sight it seems almost as if it was the same people. But a closer investigation shows that with all this similiarity there is quite an appreciable amount of difference. Some things manufactured at Bologna are never found at Este, and vice-versa.

As a centre of metal-working Este began independently of Bologna and always retained this independence. If Bologna was the Birmingham of ancient Italy then Este was certainly its Sheffield. Even in the earliest Atestine tombs there were superb great ossuaries made of bronze. The technique is the same as that used by the Villanovans, a process of folding hand-hammered plates and fastening them with ornamental rivets, but the forms are different. In all periods the Venetian situla, which was the most characteristic product of Este during more than four hundred years, can be readily distinguished from the Bolognese. It is evident that the Atestines brought their knowledge of bronze-working from their original Danubian homes; they were already experienced craftsmen when they arrived in Italy. And with the technique they also brought the form of their favourite bronze vessel. It is impossible to maintain the claim sometimes made for colonial Greece to be the inventor of the situla; Este has a clear priority of several generations on any system of chronology. The situla is simply an evolution from the household bucket, but it was the Atestines who made it an object of beauty, and it is quite likely that their work suggested the form to the Bolognese. Together with the situla the bronze girdle had an immense vogue at Este. The earliest examples of girdles are some remarkably fine specimens which may be dated about 800 B.C. and very closely resemble girdles found both at Bologna and Corneto; it is difficult to say which of these several districts was borrowing from the other. But the later girdles of Este are of a different shape and quite unlike anything known in other parts of Italy. The influence of metal work entered into the manufacture of pottery to a quite extraordinary extent at Este, and

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produced a remarkable hybrid art which is one of the most distinctive characteristics of this period and region. Large-headed bronze nails were inserted into the soft surface of the clay before baking, generally arranged in designs of meanders and spirals but sometimes even outlining the figure of an animal. This process produced exceedingly handsome jars and bowls, which were no doubt regarded as only second in quality to those made of bronze.

From 800 to 500 B.C., the very time when the Villanovan culture of Bologna was at its weakest, the civilization of Venetia was growing stronger and stronger. The trade of this region was evidently with the Danube and with the interior of Italy, but in this case again it must be observed that there is no trace whatsoever of any overseas traffic. The absence of any Greek pottery and of any first-hand Aegean products at Este before 500 B.C. is a fact of capital importance. But at the end of the sixth and beginning of the fifth century there is a change. The political expansion of the Etruscans now began to have its effect through the proximity of the newly planted colonies. Etruscan motives now begin to appear and the decoration of bronze situlae and girdles is enriched by the introduction of zoomorphic and floral designs. Excellent as the work of the previous time had been it must be admitted that Atestine art comes to its finest flower as a result of this hybridization. The Etruscan situla of the Certosa is rivalled, though not equalled, by the Benvenuti situla of Este; and this in turn was the parent of a long line of Atestine situlae (plate II), which became so famous that they were manufactured for the remote valleys of the Tyrol where they originated a new and curious Alpine school. No less admirable in its way than these situlae are engraved bronze girdles, curiously different in their sophisticated style from the fine barbaric types of the eighth century.

When direct importation from Greece began to affect Venetia, which was not earlier than 450 B.C., it brought no improvement but only produced a rapid decadence. From the time when Attic red-figured vases are found in the tombs the native art declines. The Atestines seem to have had little inclination to adopt the new Greek styles, which did them nothing but harm. Presumably it was the popularity of the Attic wares which destroyed their own very interesting pottery manufactures, and by robbing them of their markets took away the incentive to production. Whatever the explanation may be the fact is certain. Atestine art in all its branches steadily declined after 450 B.C. and virtually died out in the fourth century. It was always a

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purely native civilization, of which the original roots lay in Central Europe, but which grew to its full strength and maturity on Italian soil. Its virility and independence were remarkable, and yet it was not incapable of assimilating foreign influence. The highest point of its perfection was reached under Etruscan inspiration, but it was killed by the touch of the Greek. The civilizing work of Este was confined to Venetia and the north-eastern borders of Italy; it had little effect south of the Po. But of all the native cultures the Atestine was the longest lived. Even in its decadence it showed a singular tenacity; Este was still alive and vigorous in the third and second centuries; the Romans never conquered Venetia but peacefully occupied it. Down to the beginning of the Christian era the Atestines retained their own language, dress, and customs.

The fourth of the cremating nations in Italy during the Early Iron Age is the Comacine. They may be dismissed with a short notice because they did not play any important part in the development of the country though their existence as a distinct unit must be recognized. The evidence for the settlements of the Comacines begins about 1000 B.C. but is very sparse, perhaps owing to the incompleteness of exploration, for the next three centuries. When a fair amount of material becomes available for Lago Maggiore and the surroundings of Como about 700 B.C. the Comacines begin to appear as rather poor relations. They produced little of their own and seem to have been mainly dependent upon imports. The direction from which these imports came is however a matter of some interest; it is quite significant for instance that several swords of the eighth or ninth century at Como were of definitely Hungarian patterns. From 750 to 500 B.C. the small ornaments bear so much resemblance to those of Picenum and of Istria, that we must infer there was a trade route from the head of the Gulf of Venice by which these objects passed westwards from Trieste as well as southwards down the Adriatic. Some signs of a barbaric local art begin to appear about 500 B.C. but the whole of Lombardy from this date onwards became principally a market for Etruscan products, the unquestionable superiority of which stifled any nascent local talent. This is the moment when the Etruscan export trade reached its zenith; the manufactures of Etruscanized Bologna were now forwarded by way of the Alpine passes to the Rhine, the Ligurian settlement at Bellinzona acting as the principal transport agents.

Very different in their entire character and outlook from the four cremating nations are the Picenes and their kindred, amongst whom

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must be reckoned the Samnites. These all lived on the eastern slopes of the Apennines and along the seacoast of the Adriatic. Though some consider them to have come into the country in the Bronze Age I hold it to be a more reasonable theory that they are simply descendants of the original neolithic population. On this view then they would be like a strong reef against which the flood of Villanovan and Atestine migration beat in vain. They retained their old burial customs, and had little intercourse with their enemies on the north and west. It is in consonance with this theory that the Picenes, as soon as there is sufficient evidence to judge of them, about 800 B.C. appear as a people of very strongly marked and peculiar characteristics. Above all things they were warriors. The martial character of the Samnite mountaineers is well known from Roman history, but the equally pugnacious temperament of the Picene dwellers on the coast would have been unknown if it were not for the contents of the graves. In the typical cemeteries of Novilara scarcely a single tomb of any man is without its weapons, one spear was the minimum equipment and there were often two or three. Daggers were almost as frequent as spears; one type of dagger was of Hallstatt derivation, the other two were of different origin. Very peculiar were the chopping swords, unlike anything found elsewhere in Italy but directly related to types known in Bosnia. Helmets were of a class which find their closest parallel in the Eastern Alps. Some variants of the weapons may have been derived from Greece after Dipylon period.

The same lesson which is taught by the weapons is emphasized by the ornaments. There is no trace of any influence from Este or the Villanovans, the whole outlook of the Picenes was evidently to the east, up and down the Adriatic. As I remarked when speaking of the Comacines there seems to have been a trade system which had its central point at the head of the Gulf of Venice. From somewhere near Trieste there were distributed torques, pendants and small ornaments of various kinds which are practically identical whether found in Lombardy, Istria, Picenum or Bosnia, but do not occur in central Italy or Venetia. Where they were actually manufactured it is difficult to say, but it is tempting to suggest that the actual makers were the Picenes, who must have needed some marketable commodity to use in exchange for all the foreign imports which they brought into their country, including amber which was used in quantities unparalleled elsewhere. Examples of Picene pendants are shown in plate III. During the sixth century a new and very important commerce can be observed along the

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coast of the Adriatic. Ionic bronzes, bowls and vessels with figurines for handles, such as the example shown in plate IV, or shield bosses ornamented with scenes of combat in bas-relief, have been found at sites near Ancona and Pesaro. In cemeteries of the same district were Greek ivory carvings and exquisite figures of animals carved in amber. The route by which these arrived is proved beyond all question, by the occurrence in the same places of an unmistakable class of geometric painted pottery which is native to Apulia. This proves that there was no direct intercourse with Greece, but that the products of Ionic art were forwarded through the Greek colonies of southern Italy. Once it had begun a steady trade was carried on between Picenum and Apulia, extending probably to Tarentum. The increase in this commerce had the effect of completely Hellenizing Picene life on its artistic side, without in any way impairing the native vigour and martial capacity of the people. The hardy Samnites of the mountains received perhaps an occasional object, for preference a cuirass, forged by a Greek bronze-smith; but they despised luxuries or were too poor to buy them; so that it is only among the Picenes of the coast that real civilization has been found.

Although it is only possible to speak with any certainty or clearness about northern and central Italy yet there are some hints of the vanished nations of the South which should be recorded. In the main the civilizing of the South in pre-Roman as well as in Roman days was the work of the Greek colonies. Not only Cumae, to which perhaps too much credit has been given owing to its proximity to Latium, but the whole chain of cities of which Tarentum was the most widely influential spread Greek culture far and wide. But there were indigenous races living in the hinterland, inhabiting the mountains of Bruttium and Lucania as well as the coastal plains of Apulia, which had reached a certain level of barbaric civilization before their subjugation by the Greeks. The veil has been half lifted from the romantic history of the Siculans who lived near Locri Epizephyrii. Here on the mountain plateau of Monteleone, and on the steep hill confronting the citadel of Locri, were the settlements of the pre-Hellenic people who were ultimately conquered by the Locrians. Their cemeteries date from the ninth or tenth century B.C. to the seventh and sixth, and reveal a culture quite different from anything hitherto described. It is too early as yet to formulate a theory of its history and affinities; but the complete independence and isolation of this people from central Italy seem beyond question. Probably the vitalizing spark was brought to this

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rather primitive population by early explorers from the Aegean before the definite establishment of actual Greek colonies.

In Apulia archaeological exploration has been so slight that there is no information of any kind for the Iron Age before the seventh century and even after that time little is known except the pottery. Nevertheless a study of the pottery reveals a certain amount as to the native character and genius of the peoples whom the Romans knew as Daunians and Peucetians. The independence of these two tribes and their constant reassertion of their own personality against every onslaught of the foreigner is just as remarkable in their art as in their political history.

Their painted pottery shows conspicuous original genius with a most unusual appreciation for the qualities of decoration and design. It is interesting to note the difference in temperament between Peucetian and Daunian, the one so grave and ascetic, the other so fanciful and versatile. Nothing more clearly demonstrates the tenacious vitality of the Daunians than the renaissance of Canosa in the third century (plate v). The little city refused to be swamped and raised itself to the position of a leader in the Hellenistic art-world.

Elsewhere in Italy however the fourth century saw the mingled tides of Etruscan and Greek art sweep over the whole peninsula and drown the older indigenous civilizations. These were not all of equal value, the most important and the most highly advanced were certainly the Villanovan and the Atestine. The Villanovan was gradually transmuted into Etruscan and lost nothing in the process; the Atestine seems to have died and left no heir. For five hundred years the several nations which made up the mosaic that we call Italy of the Iron Age had prepared the way; by the year 400 B.C. their work was done. The levelling plough of late Hellenism passed over Italy and was followed by the Pax Romana.

Two Great Dolmens of Central France

by VICE-ADMIRAL BOYLE SOMERVILLE

THE visitor to Tours, having exhausted himself, as is soon and easily possible, in 'doing' the chateaux of the Loire, may find refreshment for his jaded brain by passing from history to prehistory, and turning back the pages from 1500 A.D. to 2000 B.C. or thereabouts, which he may do in the course of two short journeys from his hotel.

There are many prehistoric remains in the departement d'Indre et Loire, and in the arrondissement of Tours alone there are 9 dolmens.

The first of the two described in this paper is situated 10 kilometres from Tours by road. The other, though not in the same departement is within easy rail distance from Tours, and adjoins the town of Saumur.

The name 'dolmen' is here employed, since this is the official term in France for the form of prehistoric structure to be described, but 'burial chamber', our own term, is certainly more suitable for these two monuments, as will be realized from a study of the accompanying plans (figs. 1 and 11). At the same time, they are, on the whole, unlike anything of the same nature to be found in the British Islands, though they have their counterparts in Brittany, and elsewhere in France. They are also on an enormously greater scale than anything to be seen on our side of the Channel. The casual visitor to a megalithic monument can often be disappointed on seeing what appears to be merely a jumble of largish weathered stones among the heather or grass, or on finding an uncouth structure, so badly ruined and robbed from as to make but little appeal as a 'sight'. He will find no disappointments of this sort at either of the places here described. In each case, though emptied of their original contents, and with but vestiges remaining of the covered alley-way forming the entrance to these tombs, the actual burial chambers stand erect and complete; the stones of which they are constructed being of a vastness that has defied robbers. They require to be seen to be appreciated, and to be measured with a tape in order to be believed in. Moreover, if the archaeologically minded visitor will take with him a prismatic compass

FRANCE - Département d'Indre-et-Loire - near Tours
Latitude 47° 27' 45" N. Longitude 0° 38' 54" E
DOLMEN de SAINT ANTOINE ou ROCHER
"La Grotte des Péas"



(b)



North Elevation View

(c)



South Elevation View

(d)



West Elevation View

(e)



East Elevation (Entrance) View

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as well as a tape, he may see for himself that these immense structures are not fortuitously placed on the ground, but that their plans are definitely and exactly orientated to the sunrise points of certain days of the year;—the same sunrise points found in the orientations of prehistoric burial places in Scotland and Ireland—whatever may have been the significance of these dates in regard to the dead of either country.

(1) DOLMEN DE SAINT ANTOINE DU ROCHER. (Fig. 1, a-e). This dolmen is named from the commune in which it stands; but it is considerably closer to the village of Mettray than to that of S. Antoine, and anyone intending to visit it from Tours should name Mettray in seeking guidance, and refer to it as 'La Grotte des Fées', its local name.

There are not many people in Tours able to direct one correctly to the site, though the road is neither difficult nor obscure; but it is likely that a guide might be obtained at the Syndicat d'Initiative whose office is in the Rue Nationale, where it is advisable to get a conveyance. It is possible to reach Mettray by train, if desired, but the trains are not very conveniently timed for visiting the dolmen, and there is still a walk of about 3 kilometres from the station to the site. On the other hand, it is possible to go direct from Tours by good roads in either a horse or motor conveyance to within a hundred yards of the place.

The following route instructions may be found useful in directing the *cocher* or *chauffeur*, as the case may be, and to supplement the information given on the Michelin map of the district (no. 19 Tours) on which the position of the dolmen is marked. Leave the town by the Pont de Tours, and having crossed the bridge go straight on up the steep hill facing you to the Plateau de la Tranchée, where there is a small 'Place', having as its centre an ugly war memorial. Two roads lead from this point, to the left and to the right, each bordered by houses. Take the road to the left, which is the larger of the two. Mettray may be reached by continuing straight along this road; but a pleasanter, and less motor-frequented road—no longer in point of distance—is found by taking the first turning to the right off it, still between small houses. This road soon bends round to the left and reaches open country. After running fairly straight for about 2½ kilometres, a point is reached where it branches into two forks. Take the left hand fork, a rather narrow and bending road, which first crosses

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the railway, and then passes a pleasant wooded place with houses, where is an agricultural reformatory for boys, named Colonie de Mettray. Mettray village is reached after another kilometre. It has in it a large and conspicuous church. Turn sharp to the right past the church, taking the road to Saint Antoine du Rocher. This road touches the railway track at one point, and then bends northward among grass-lands, with a quiet stream running through them, until, at about 2 kilometres from the church, you can see on the right, in the middle of a large field, a circular grove of trees, like an island in its midst, with, just beyond it, a farm establishment (La Choisille), and a mill by the stream (Réchaussé). A gate on the right of the road opens to the farm road leading to these houses. Enter by this gate, and after two or three hundred yards along the road you will be abreast of the grove of trees before mentioned. Leave the carriage at this point and walk along the little path to the grove, in which, completely hidden and protected by the trees is 'La Grotte des Fées'.

The dolmen consists of a single chamber, 30 feet long inside, 11 feet wide, and 6 feet high to the flat roof. At first sight it seems so regular, so rectangular, and complete as almost to be uninteresting, and to lack the air of romantic strangeness and forlornness proper to dolmens. But when the mode of construction is realized, and the age for which it has been standing is remembered, there can be no thoughts but of admiration and of wonder. In spite of its dimensions as a structure, it is composed as to walls and roof of only 10 stones, namely, three great slabs for each wall, one more closing the western end, and three monstrous blocks, fairly flat, forming the roof. The wall-slabs are each of them about 10 feet long, 6 feet high, and 18 inches thick, while the end slab is 16 feet long and at one part is 3 feet thick, but great as these are they seem almost puny by the side of the three capstones. The two eastern of these are each 17 feet by 13 feet, while the western is 10 feet by 13 feet; and as to thickness, the centre stone is 4 feet thick in most parts, and weighs between 50 and 60 tons, while the other two are from 2 to 3 feet thick, and are each more than 20 tons in weight. There is no sign of actual trimming on the surfaces of any of the stones, but the hard, dark brown, calcareous rock of which they are composed seems to have been broken off in slabs when quarried, in such a way that the opposite faces should be roughly parallel surfaces, and be possessed of some degree of flatness. It is not possible to say where these great slabs were quarried, but they stand on flat, alluvial land, and the nearest rocky hill is about half a kilometre distant; so

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that, almost certainly, they were conveyed for that distance at least, after quarrying.

Two other stones comprised in the structure remain to be noticed. The first of these is placed upright at right angles to the southern wall, at about six feet within the chamber from the eastern end. There was probably originally a similarly projecting stone from the opposite wall, leaving a central space between them to form a 'door-way', which would be closed by a third stone. (See plan of the Bagneux dolmen, where this feature remains, fig. II a, e). The second stone to be mentioned is also on the southern side, but outside the entrance. It is placed so as to continue the line of the southern wall of the chamber, but as it is only about 4 feet high, it seems likely that it is the last remaining stone of a former *allée couverte*, or way of approach, leading into the burial chamber itself, and not part of the tomb, properly considered. A lower entrance-way of this nature is a usual feature of the dolmens of Brittany, and elsewhere, though the dolmens themselves are somewhat different in construction, and not as a rule so rectangular in shape.

A final, and certainly a fundamental fact with regard to the erection of this burial chamber remains to be noticed, namely, its orientation. The long sides of the vault are parallel to one another, and have been placed aligned in the ground on the azimuth $91^{\circ} 50'$. This angle is consequently the orientation of the whole structure, from end to end. The sky-line in that direction is a flat hill-crest, fairly close to the dolmen, crowned with trees, and from it is at an elevation of $2^{\circ} 00'$. This azimuth and elevation combined trigonometrically with the latitude of the site, *viz.*, $47^{\circ} 28' N$, indicate precisely the line of apparent sunrise on the days of the equinoxes (21 March and 21 September of our calendar); dates which are constantly indicated in similar fashion in the orientation of prehistoric structures in the British Isles, showing that there must have been some connexion between these days of the solar year and the burial of the dead.

NOTES

There is an excellent scale model of this dolmen (La Grotte des Fées) to be seen at the Musée at Tours, originally made for the National Exhibition of Tours, held in 1892.

A description, with measurements (no plans or photographs) will be found at p. 41 of *Les Monuments mégalithiques de la Touraine* by Louis Bourez, 1894. This states that there are no existing accounts of excavation having been undertaken in the (earthen)

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floor of the chamber of the dolmen, nor any record of articles ever having been found in it. It is also stated that traces of the tumulus which formerly covered the dolmen are still visible (1894). It is possible that the grove of trees now surrounding the dolmen marks the extent and boundary of the mound ; but no other real indications were visible in 1923.

(2) **LE GRAND DOLMEN DE BAGNEUX.** (Fig. II, a-e). The town of Saumur is about 60 kilometres from Tours, and, like Tours, is built chiefly on the south bank of the Loire. It is reached from Tours in about 1½ hours by train. The railway station of Saumur is on the north side of the river, and a straight road leads directly from it to Bagneux, which is a suburb of Saumur, and about 3 kilometres from the station. The road crosses the Loire past an island in the middle of the river, upon which part of the town is built, then straight through Saumur itself, and after passing over a second bridge crossing the small tributary stream Thouet, leads through Bagneux. Here the road divides ; there is a large new church on the left, and opposite it, on the right hand side of the right hand road there is a small cottage at the end of a row of detached houses, with a front garden, bearing a notice-board that tickets for visiting the Grand Dolmen are obtainable within. There is a trifling charge, and you are then directed through the garden to a small open space on the left of the house, sprinkled with trees, among which stands the dolmen.

It is a structure of exactly the same style as that of Mettray, described above, but it is twice as large in plan, and greater in every way. It is an astonishing sight. It is said to be the largest dolmen in existence, and it is likely that this is the case. The interior space covered by the capstones is 61 feet long, about 16 feet wide, and from 8 feet 6 inches to 9 feet high. The chamber is constructed of 13 gigantic stones, of which 4 form the northern wall, 4 the southern wall, one closes the western end, while the roof is formed of 4 capstones, each about 2 feet thick. Of these, the westernmost is 23 feet square, the second 23 feet by 12 feet, the third 23 feet by 18 feet, and the easternmost is 17 feet by 9 feet. Either of the first three would floor a good-sized room. A ladder is provided at the cottage by which one may get on top of the dolmen, and on doing so, the sight of this row of immense flat stones, laid evenly, like a pavement, on supporters, at a height of nine feet above the ground, is one to stir feelings of the most profound wonder. They must surely be among the largest stones in the world to have been hewn and raised into an edifice by man at any epoch of history or prehistory.

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The interior is a single undivided chamber resembling a cave—a cave-tomb for a cave-man. For about 45 feet of its length from the western end the walls of the chamber are parallel, but the two easternmost slabs, each about 16 feet long, are set in the ground so as slightly to incline towards one another towards the entrance, and thus the interior width of the chamber is diminished from one of 16 feet to the westward of these slabs to one of 13 feet at their eastern end. At a distance of about 3 feet inwards from the entrance there are 2 transverse slabs reaching to the roof, each 4 feet 6 inches wide, which are set exactly opposite one another so that a space, also 4 feet 6 inches wide, is left as an entrance, or 'door-way' between their inner edges. A fallen slab, 9 feet square, lies flat on the ground in front of this entrance way, and may possibly have been the 'door' which closed—and overlapped—the opening to the vault. Modern masonry, with wooden door-jambs and a door have been placed at this entrance to close the place against intruders.

Inside the chamber, at one point on its central line there is a single upright slab evidently placed to be a support to the eastern end of the great western capstone. It is set with its sides parallel to the sides of the chamber, and has no appearance of having formed part of any interior partitioning. The only other object to be seen inside the chamber is a recumbent pillar-stone, 7 feet 6 inches in length, which lies with its side placed along the southern supporter of the second capstone from the western end. It is too short by eighteen inches to have been a supporter of the roof at any point, and probably is one of the exterior stones of the monument, carried to its present position for safe-keeping, for it performs no structural function as it lies.

Outside the chamber, at the eastern end of the northern line of supporters there are two slabs which continue the line of the wall on that side, but at half its height, namely at about 4 feet 6 inches from ground level. Facing it on the southern side there is a largish slab fallen flat on the ground. These stones are, no doubt, the remains of the *allée couverte* which once formed the entrance-way to the burial chamber, of which the other stones, both supporters and covering slabs, have disappeared.

The northern supporter of the great western capstone has, at one part of its outside surface, a series of deep corrugations, which appear to be artificial. Near these are two depressions in the face of the stone which strongly resemble cup-markings. One of these, placed at about 7 feet from the ground, is almost certainly not

FRANCE
Departement de Maine-et-Loire - near Saumur
Latitude 47° 44' 40" N, Longitude 0° 06' 11" W.
GRAND DOLMEN de BAGNEUX
July 1923.

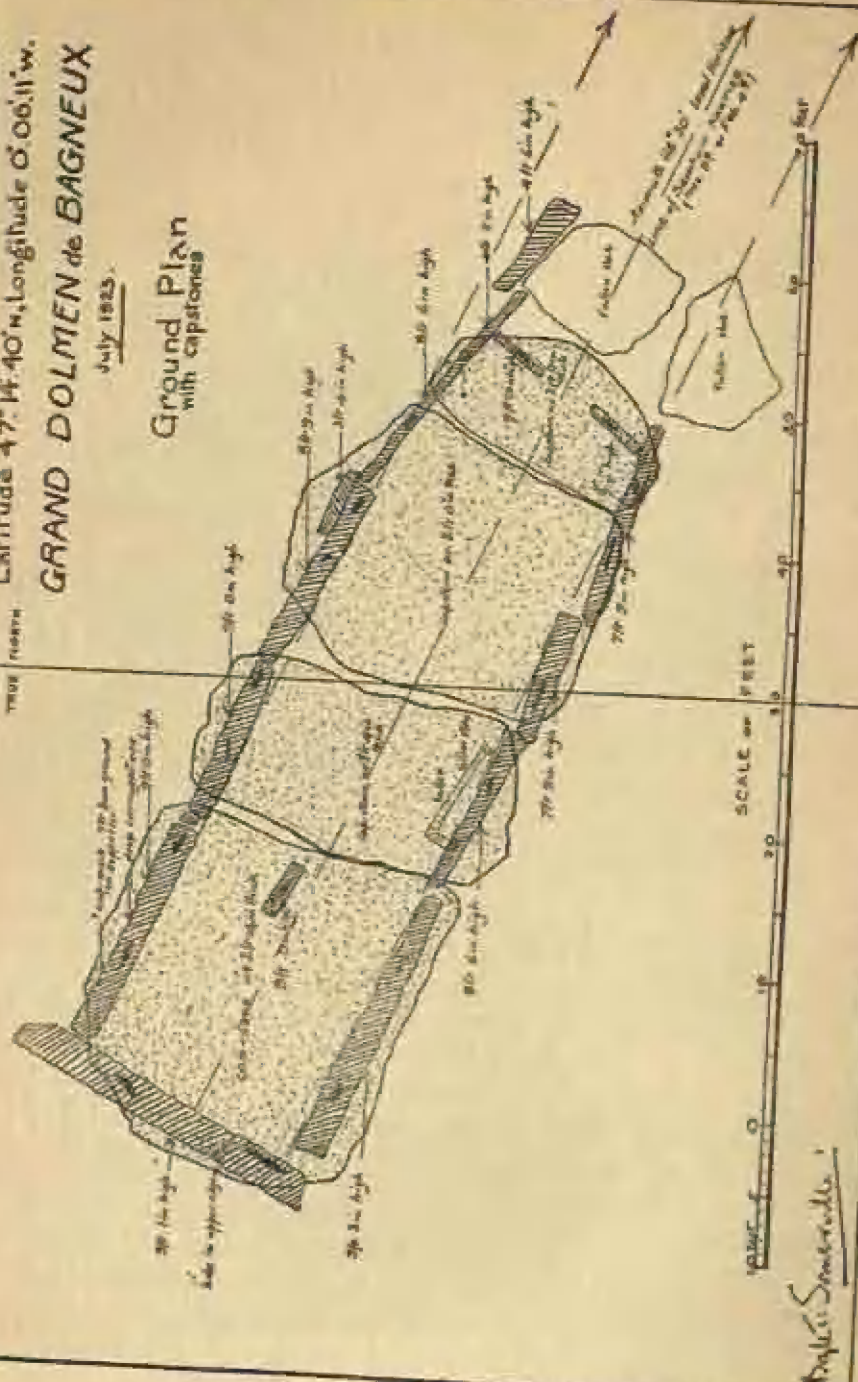


Fig II (b)

GRAND DOLMEN de BAGNEUX



North Elevation View

(c)



South Elevation View

(d)



West Elevation View

(e)



East Elevation (Entrance) View

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a natural pitting of the stone surface. The other, nearer the ground, may be so.

The only other exterior stone requiring notice is at a point on the outside of the northern wall, where, at the eastern end of the third supporter a triangular slab, 3 feet 4 inches high, is planted with its inner face flat against that of the supporter, apparently meant to supplement the wall at that point. No doubt this is an original feature, though the supporter itself, a great slab 14 feet long, 9 feet high, and nearly 2 feet thick stands to its work as firmly and solidly as the remaining upholders of the capstone roof of the chamber (which taken as a whole weighs over 190 tons), and appears never to have been in need of this assistance.

The north and south walls of the chamber have each a slight inward batter, no doubt intentional, and the capstones on each side are made sufficiently wide to overhang their supporters in most places by about 18 inches. The great single slab which closes the western end, 24 feet long and $2\frac{1}{2}$ feet thick, has similarly been given batter, which the capstone overhangs. It is probable that this inward slope to the supporters all round has largely contributed to the stability of the structure, as it was intended that it should, and that the overhang of the capstones, also intentional, has prevented rain from falling directly on the foundations and sapping them; so that the whole edifice stands as rigidly erect today as it did when it was constructed long ages ago; a model of trabeated architecture.

The orientation of the monument, though to a different point of the horizon from that employed at the Dolmen de Saint Antoine du Rocher, is equally definite and exact. The north and south walls are for the greater part of their length parallel to one another, and are each of them on the azimuth $114^{\circ} 30'$. This angle is therefore that of the central line of the chamber, passing through the 'door-way' at the eastern end. The horizon in that direction is level with the observer's eye (elevation $0^{\circ} 00'$). Combining this azimuth and elevation with the latitude of the site, $47^{\circ} 15' N$, gives (precisely) the line of apparent sunrise on the half quarter day in November or February, when the sun in its yearly path is at the mid date between the winter solstice and the equinox (on either side). The present calendrical date is 8 November or 4 February. It is interesting to note that this also is a fairly frequent orientation in Scottish and Irish prehistoric monuments. The date itself is, to some extent, still remembered in

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Gaelic countries, though now transferred to 1 November, and has the special name 'Samhuin'. In England too and elsewhere a recollection remains of its connexion with the dead, in the festival of All Souls, and of 'All Hallow e'en'. The half quarter day of February has lost its observational features, if it ever had them.

There are no remaining traces at Bagneux of the tumulus of earth that, no doubt, at one time covered, and probably also filled the chamber, interring the dead within it. The present floor is of earth, and there are no signs of excavation having taken place, at all events within recent years.

No one with the least imagination can regard these works of primitive man at Mettray and at Bagneux without amazement. The amazement becomes bewilderment when the actual measurements of the stones of which they are constructed is taken, their weights calculated, and the consideration is brought home to one that they have been standing in their present attitude, unmoved throughout at least 4000 years, and possibly for even longer. No doubt they have to some extent been supported and protected by the mound of earth that once enveloped them, and filled the chambers of the dead, now empty and exposed to wind and rain; yet even so, when we consider the architectural efforts of civilized man, and the constant repairs and efforts necessary to keep them erect, we may feel a new interest in considering what may have been the cultural state of mankind of the Neolithic Age in Western Europe which could leave monuments of such permanency to be its witness. There can be no doubt but that these structures are places of burial, either for a single great person, or for a whole family or clan; yet what form of ancestor worship, or what exaggerated fear of the ghosts of the departed, can have compelled the men of those days to face the tremendous labour implied in their erection? Without any knowledge on the subject, we suppose them to have been devoid of all forms of mechanical appliances, excepting the very rudest, and to have been dependent solely upon 'brute force'. Yet when we consider the practical problems presented in the construction of these tombs, the quarrying, the transportation from some distance to the chosen site, the erection of the supporting slabs, above all, the lifting and correct placing in position of the immensely heavy capstones, so that they should rest level on the edges of their supporters at a height of several feet above the ground, we cannot but feel certain that some knowledge of how to deal with heavy weights

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that they possessed has been lost to mankind. One has only to look at the photographs of the appliances necessary in modern times merely for the re-setting upright of the 'leaning stone' at Stonehenge,—the great balks of timber, the carpentered frames, the ropes, the chains, pulleys and differential tackles, and a steam engine—to realize that this is the case. Mr Stone, in his book on Stonehenge has given an interesting practical exposition of how the necessary work of transport and erection may have been done in that case by sheer man-power, aided only by trunks of trees for rollers, and ropes (presumably of hide). But, we may ask, how were those great trees felled for this purpose by people possessed only of stone implements, and how many aurochs was it necessary to catch and slay with stone arrows and clubs in order to provide the great lengths of hide rope required for the transportation and subsequent erection of these massive blocks of stone, and where is the prepared road of transportation specially laid to prevent the pillar stones and their rollers from sinking into the soil on their way to the place of erection? The average weight of the Stonehenge pillars is said to be about 26 tons, and the lintels $6\frac{3}{4}$ tons, but these are small affairs by the side of several of the capstones of Mettray and Bagneux described above. A cubic foot of limestone weighs $156\frac{1}{2}$ lbs., and if this be accepted as the standard of weight of the 'calcareous' rock of which both these French dolmens is built, the centre capstone of Mettray will be found to weigh over 56 tons, and the two others 24 tons each. These weights of the Mettray capstones, great as they are, sink almost into insignificance, however, by the side of those of the Grand Dolmen at Bagneux. The western capstone of this monument weighs no less than 86 tons, by the above standard of weight per cubic foot, and the others are 33, 55, and 18 tons respectively, making a combined weight of 192 tons, all of them having been raised through a height of 9 feet from the ground.

In respect of man-power for the manipulation of these weights, it would require at least 30 and probably 40 men to move one ton of rock along a rough road, aided only by levers and rollers. This would entail the employment of about 3,000 men for the moving of the great western capstone of Bagneux, alone, over flat ground; and more still if the weight had to be dragged up an inclined plane (as the method is supposed to have been) to place it on its supporters. There might be space in the surrounding country for the manoeuvring of such an army, if it could be mustered for the purpose, but how could its strength be concentrated and applied to the block of stone so as to move it?

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No rope of any description would stand the strain, rollers of logs would be crushed into match-wood, and levers broken short off directly it was attempted. We are in the presence of a mystery. Men of the neolithic period, so far as we can tell, were men of like stature and strength with ourselves. There may have been 'giants in the land in those days', but hitherto no traces of their bones have been found, and though many of their graves are still popularly referred to as 'Giant's Graves', on account of their great size, the idea cannot be credibly entertained that such super-men actually existed. Was the urus, the aurochs, or the horse sufficiently tamed in those days to be brought to the task of haulage? The mammoth and the elephant (if ever domesticated) had by that time no doubt disappeared from off the land; and even if any or all of these animals were employable, the problem of the application of their strength to the heavy masses of rock, as they lay in the quarry or on the ground, remains to be solved.

One thing is clear, namely that the men of Western Europe of those ages cannot have been the complete savages that the neolithic men of the present time are (in the South Seas, and elsewhere), for not only had they the knowledge and the means to design and construct these massive tombs, to hew the stones from the quarry to a required dimension (for all had to be made to fit, however roughly it may seem to us, with one another, supporters with capstones), to transport them, and to erect them at the desired site, but also they had sufficient knowledge of astronomical affairs, of Times and Seasons, to lay their tombs out on the ground in specific and definite directions, to accord with certain moments in the annual path of the sun (and perhaps of the stars also), through the heavens. Nor can we doubt that they had assured views on the continued existence of man after death, or else why did they build these massive prison-houses to preserve in safety his bodily remains? Perhaps, even, they considered the possibility of his future resurrection? It is only by close and intensive study of their remaining monuments, wrecked, and rendered still more difficult to understand as they have been by the ignorant (if 'civilized') of our own times that we may hope ever to recover the knowledge of all kinds that they possessed, now lost and forgotten.

NOTES ON THE FIGURES

The surveys of both dolmens were made by clinometer-compass and tape-measure; and were each plotted on a scale of $\frac{1}{120}'' = 1$ foot (1:120).

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Variation of compass (1923) at Tours, $12^{\circ} 20'$ W, and at Saumur, $13^{\circ} 00'$ W.

In the ground plans (a) the section of supporters at ground level is shown shaded in diagonal lines, and the positions where the capstones rest on their supporters in solid black.

The outline edge of capstones, as seen in plan, is indicated in plain black line, and their surface-extent by small dots.

In the elevation views the shapes and sizes of the stones are drawn to scale ($1\frac{1}{2}" = 1$ foot), but the details of surfaces, etc., are sketched.

The positions of trees that surround and closely adjoin the dolmens in both cases are, for the sake of clearness, omitted. In the case of the Grand Dolmen at Bagneux, the details of the modern door-way at entrance to the chamber are omitted also.

In figs. 1 and II (a) the heights of supporters there shown are in all cases taken from *inside* the chambers. In both cases the ground outside the dolmen is somewhat irregular, while that inside is flat and even.

The 'Children of the Sun' and Central America

by ERIC THOMPSON

THE theory that American aboriginal civilization was derived from south-east Asia and indirectly from Egypt has received such wide publicity that it is no longer possible to dismiss it without refutation and wait for it to die a natural death. Such was the policy followed when the extravagances of Lord Kingsborough claiming that the inhabitants of Central America were the lost ten tribes first saw the light. Le Plongeon's fantastic claims too had their hour and then passed into the limbo of lost causes. Other heads of this hydra, peopling Central America from the lost continent of Atlantis, from Babylonia, Africa, New Zealand, Easter Island, and in fact from nearly every quarter of the globe, were not lopped off but left to wither away from lack of that blood, so necessary to this type of hydra—reasoned argument and proof.

However, the natural decay, which would otherwise have overtaken before now the wild flights of the 'Manchester School' into Central American archaeology, has been staved off, and in fact almost replaced by rejuvenation, thanks to strong injections of publicity.

It would be well then to take up several of the arguments of Professor Elliot Smith and Mr Perry, not as an ardent defender of the Monroe doctrine of American archaeology, but as a means of seeing how far we are justified in adducing an outside origin for part of American culture.

The 'Children of the Sun' are claimed to have wandered across the world in search of gold, and other precious metals, and pearls and pearl-shell. Mr Perry in a series of somewhat defective maps of the Pueblo area adduces that they generally settled close to districts rich in metal or semi-precious stones. As the impetus of the movement was, on his own theory of degeneration, much stronger in earlier times, it would be as well to turn to the Maya area, remembering that Mr Perry scoffs at the idea of an earlier Maya culture ante-dating the dated old empire cities.

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The oldest known Maya dates have as their provenance the city of Uaxactun. Uaxactun is situated in the Peten area, a low-lying limestone country, unblest with any mineral except small quantities of flint, and without even streams from which pearl or pearl-shell might be obtained. The next earliest Maya sites are the cities of Tikal, Naranjo and Copan. Of these Tikal and Naranjo are in the same position as Uaxactun, entirely deprived of those very objects to obtain which the 'Children of the Sun' crossed half the world. Copan alone is built on the banks of a river, and in an area where minerals in small quantities may be obtained.

It is extremely doubtful if the Maya of the old empire were acquainted with any metal. The only gold object ever claimed to have been found in an old empire site is a portion of a cast gold bell from the Waldeck collection now in the British Museum, which is said to have come from Palenque. The art is thoroughly un-Maya, and the majority of Mayologists reject it as an artifact of the old empire Maya. There is a possibility that it was a surface find belonging to a much later period, or possibly it was obtained at some other site. Waldeck was so notoriously inaccurate, that the scientific necessity of taking the trouble to note the provenance of, and the circumstances in which, an object was found would have weighed little with him.

No copper or bronze object has ever been found in an old empire burial or *in situ* in an old empire site, and although the evidence is but negative, it is nevertheless fairly convincing that the early Maya were likewise unacquainted with these metals. Had objects of bronze, although known, been of considerable rarity and therefore not buried with the dead, surely they would be found with the caches of jadeite found beneath several of the stelae at Copan. On the other hand copper axes, celts and bells, and objects of gold are found at the later sites of the new empire, which flourished long after the old empire cities had been abandoned.

In addition to the search for metals, precious stones, pearls, etc., the 'Children of the Sun' established Sun worship as the state religion wherever they settled.

Again Mr Perry travels far from the new world centre from which he believes the heliolithic civilization radiated, to obtain his evidence of the Sun-cult. The monuments of the old and new empire, the codices, the writings of the Spanish conquerors and modern ethnological work show without any doubt that the Sun was never during the whole course of Maya history considered the chief deity. In the Dresden

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codex the appearances of the chief deities are as follows:—god B 141 times, god A 33 times, god D 19 times, god C 17 times, god E 14 times, god G (the Sun god) 6 times. In the Tro-Cortesianus codex the Sun god does not figure at all. In southern British Honduras, where considerable traces of the old religion still exist among the Maya speaking Indians, the Sun is completely ignored, but worship is paid to the gods of rain, thunder, Venus, and Itzamna. In the same way in the northern part of the colony and in Yucatan the Sun is not the centre of a cult nor the recipient of prayers.

The evidence for the existence of the dual organizations among the Maya brought forward by Mr Perry is almost invisible. Far be it from the writer to attempt to deny that the Maya social order was founded on the dual organization. But Mr Perry deduces the dual organization from the fact that the general of the army, who held his post for a period of only three years, and a junior grade of priests, whose duties though permanent were confined to the task of holding down the victims for sacrifice, bore the same name. If this is admitted as proof, the fact that the head of a big religious organization in England and the head of the army bear the same title should prove with even greater weight that England is organized on the dual basis.

The food plants of the new world provide overwhelming evidence that agriculture must have existed long before the Cambodian culture rose in south-east Asia. Certainly more than two thousand years were required for the development of the cultivated maize plant from its wild ancestors. If it is argued that knowledge of agriculture was introduced from Asia, the art would have been lost long before native plants could have been reduced to cultivation. If on the other hand the old world food plants were introduced, why have they disappeared? Wheat, oats, barley, etc., proved highly successful when introduced by the Spaniards. Furthermore, and this is an important point, the method of sowing maize is entirely different from the method employed in sowing the grasses of the old world. If the maize plant had been first cultivated by immigrants from the old world used to old world methods of cultivation, it would presumably have been sown broadcast, for the wild species is a grass. Actually the method of sowing employed from the Rio Grande to the Rio de la Plata is the same. The seed is sown either singly or two or three, or four, seeds in holes about two feet apart. Sown broadcast the maize plant would have developed along entirely different lines, probably as a short multiple-branched plant.

Mr Perry postulates the planting of these new kingdoms of the

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' Children of the Sun ' in new lands accompanied by an ephemeral burst of culture which gradually degenerates as connexion with the mother country is lost. The cultural stimulus of the older centres is withheld from the young shoots, the young plants droop and gradually fade away. It is unnecessary to compare the early old empire period of the Maya (8-15-0-0-0 to 9-10-0-0-0) with the second half of the 9th cycle—the progress registered is too obvious to be discussed and furthermore has already been dealt with by Dr H. J. Spinden in *Maya Art*. However it has been stated on so many occasions that after the fall of the old empire Maya history is one long tale of degeneration that this belief has received full credence in many quarters. It would be well then to make a more detailed comparison before accepting such sweeping statements. A comparison of Maya culture at the height of the old empire with the Maya-Toltec culture that flourished just before the disappearance of the new empire, before the inroads of civil war and the Spanish invasion, reveals the latter in no unfavourable light.

In architecture great progress had been achieved. The typical temple of an old empire city such as Palenque, was apart from its sculpture quite unpretentious. As a rule it consisted of one, two or three small rooms entered by one single door. The walls are abnormally thick. The fact that, as a rule, the temple is provided with only one narrow door meant that the interiors were very obscure, damp, uninviting rooms. The early new empire buildings are in the same style, but progress is shown by their larger size. The ' Monjas ' at Chichen Itza is typical of the period—a three-storied edifice covering a considerable area. However in late new empire times Maya architecture under the impulse of Toltec inspiration registers great progress. The narrow doorways, through which only a dim light can filter, disappear. Their place is taken by entrances three or four times as wide, divided by columns to take the weight of the lintel. Instead of the obscurity of the old empire buildings these temples are flooded with light. Furthermore the rooms increase in size, whereas in the old empire they rarely exceed twelve feet in width. In late new empire times the vaulting of the false arch is carried on wooden beams supported by pillars, enabling the rooms, instead of being confined to a width of between twelve and sixteen feet, to be extended to whatever width the builders care to make them. The dull solidity of the old empire has been replaced by an airy lightness of touch.

In sculpture the output in the late new empire times is greater than in the old empire, but conventionality replaces the free touch of

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Yaxchilan or Palenque. This is not due to degradation but to changed religious concepts. The feathered serpent-god has ceased to be the centre of an esoteric cult, and has become the vulgarized head of the state religion. Conventionalized feathered serpent- and rain-gods are represented everywhere, but where the sculptor has been able to escape from these subjects he compares favourably with his ancestors of the old empire. The animal frieze around the pyramid of the Temple of the Warriors at Chichen Itza shows that late new empire art need not fear comparison with that of the old empire.

Metals, it has already been pointed out, were probably unknown to the people of the old empire. They were used in new empire times. The use of metals has always been considered to mark one of the great advances in the history of mankind.

In the minor arts the ceramics of the new empire possibly reached as high a level as was attained by the pottery of the old empire. The old empire calendar continued to function unimpaired up to the arrival of the Spaniards. The only change was the substitution of the abbreviated short count for the cumbersome long count. Mayologists are apt to consider this a step backward, but their judgment is influenced by the extra trouble which the short count causes in any correlation of Maya and Christian chronologies. Actually the short count is as great a step forward in concise brevity as was the substitution of Arabic for the old Roman numerals.

Grounds on which a comparison of the two periods can be made, are unfortunately few, but enough has been said to show that the Maya-Toltec period, far from marking a degeneration from old empire times, actually shows a definite advance over the latter in several of those few cultural elements which lend themselves to comparison.

The discovery of pottery of types akin to those of Teotihuacan at Maya old empire sites, and the fact that Maya jadeite and shell-work has turned up at the Toltec sites of Teotihuacan and Tula would seem to show that those two civilizations were contemporaneous. The historical and chronological evidence supports this contention. Now excavations in the valley of Mexico have yielded definite stratification showing that the primitive archaic civilization is earlier than the Toltec, which of course in its turn is older than the Aztec. The 'archaics' made fairly good pottery and crude hand-made figurines; they built pyramids, wove good textiles, but, (though we must again rely on negative evidence) they were unacquainted with metals, and paid little attention to the serpent cult. The archaic culture flourished too in the

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highlands of Guatemala, and though good stratification has not yet been obtained, Dr Gamio in the course of his excavations during the 1925-1926 season outside Guatemala city obtained evidence of the modifications the archaic culture underwent during its development into classical Maya.

We can then postulate a gradual development from the archaic period up through the classical times of the late old empire to the new empire established in Yucatan. This development was broken by a period of stagnation and possible degeneration in early new empire times and a very obvious break-up due to civil war and plague just before the Spanish arrival.

Points such as the absence of the wheel, the true arch, iron, the outrigger, the true glaze have already been laboured so fully as to need no comment in this paper. The Maya calendar and hieroglyphics resemble nothing produced by any Asiatic or African civilization.

To summarize the case against the school of Elliot Smith and Perry: (1) against all evidence the 'Manchester school' claims that the known Maya sites are the earliest on the American continent. Even if that is granted the seekers of pearls, pearl-shell, gold and other metal settled in singularly inauspicious localities; (2) strong negative evidence points to the fact that the old empire, Maya and the archaics were unacquainted with metals of any sort; (3) Sun worship never played a predominant part in the religion of the Maya, or archaics; (4) the agriculture of the new world shows no evidence of Asiatic origin; (5) the frantic desire to make the facts fit the case has led to the production of ludicrous evidence for the dual organization; (6) the 'Manchester school' theory of degeneration is not applicable to Central America; (7) the absence of the wheel, the true arch, iron, outriggers, and the true glaze points to no communication in late times; (8) the utter lack of resemblance of the Maya calendar and hieroglyphs to anything outside the new world is also a stumbling block.

On the opposite side, if we ignore the many extravagances, there is a case to be met. Fundamentally the Maya religion would appear to be plain nature worship, with the idea of duality and the eternity of time supplying the mystical side. Monsters, dragons and double-headed serpents would appear to have little connexion with such religious ideas, yet although relatively rare in the archaic and early Maya cultures, they appear very frequently in late old empire times and certainly would appear to have an Asiatic air when stripped of their purely Maya features. True turbans such as are found on some of the

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subsidiary figures on late old empire stelae and notably on a small figurine from Tabasco (*Tribes and Temples*, Erans Blom, Tulane 1926, fig. 81) certainly are very Asiatic in appearance. The elephant controversy is too deep a subject to be entered into in this paper, nevertheless the Yalloch vase is a difficult thing to be explained away by non-believers. The Aztec backgammon game described by Tylor is further strong evidence of Asiatic influence. So too is to a lesser extent the purple dye industry. On the other hand the fact that pyramids were used in the new world is no evidence of Egyptian influence. 'The Egyptian Pyramid', as Joyce so aptly puts it, 'was itself the building—a tomb; the American pyramid was an accessory—a platform on which to erect a building or an altar'. If Professor Elliot Smith and Mr Perry had had the opportunity of visiting a Maya site they would realize that raised structures are a refuge from the innumerable insects of Central America, and on their summit one can often enjoy a quite perceptible breeze—a far better reason for raising them than that put forward by those writers. Occasional discoveries such as that of a Chinese jade amulet at Teotihuacan, may be evidence, but the data associated with them are meagre. The amulet in question, for instance, was a surface find, and might well have come over in colonial times, when the trade between Mexico and China was considerable, and Chinese coolies were introduced into Mexico.

As a working hypothesis we might put forward the possibility that whereas the fundamentals that place the Maya civilization above the plane of early Neolithic were autochthonous, at some period towards the close of the old empire Asiatic influence may have made itself felt in Central America. This influence would have led to the introduction of new religious concepts, and possibly a few changes in wearing apparel. The working of metals might also have come into practice as the result of this exotic wave of culture, though actually the evidence at present would seem to favour the highlands of Bolivia as the cradle of American metallurgy. What is required in Central American archaeology at present is more excavation and less execration. It would be well to remember that the archaeologist's weapon is not his tongue but the spade. Ten years' intensive excavation in Central America will reveal the truth, the quest of which is at present much hampered by discussions of elephants and macaws.

Ancient Cultivations at Grassington, Yorkshire

by ELIOT CURWEN

NORTH of the village of Grassington, near Skipton in west Yorkshire, is a large field known as High Close Pasture, largely occupied by old cultivation areas separated from one another by lynchets and low, wide banks. The area so occupied runs 1200 feet in a northerly direction, and is roughly 300 feet wide. Formerly it extended considerably to the west, as remains of apparently the same series of lynchets are to be seen covering Kimbergill Hill and extending to the southern slopes of Lea Green. On High Close Pasture the lynchets and banks are well preserved; they enclose rectangular fields among which, though varying in size and shape, the form of a short, broad strip seems to predominate. It is extremely difficult to deduce the dimensions of a customary acre from the actual fields on the ground,¹ but in this case the strips average from 360 to 400 feet in length, and round about 75 feet in breadth—dimensions which suggest a 1×5 acre with an area of about 0.65 acre.

For the most part the lynchets run along the slopes of the hillside and vary from one foot to four feet six inches in height. They consist of mould with stones, and overlie the subsoil of clayey gravel. The banks on the other hand run up and down hill and also divide the fields where the slope of the hill is not marked. They are low but wide, not often rising more than two feet, but spreading out from nine to fifteen. They appear to consist of stones covered by a small layer of mould, and at first suggest that in origin they are the result of the clearing of the enclosed areas of such loose stones as the early cultivators found. Low banks so formed divide some of the ancient cultivations at Park Brow on the Sussex Downs. A section cut through one of the Grassington banks (at B) revealed, however, that it consisted of a foot of mould largely mixed with moderately big stones lying on an even core of

¹ If the plan given by Seebohm (*Customary Acres*, p. 123) of the open fields round Carnac in Brittany be studied, it will be found that, if the scale given is correct, there is not one plot which approaches in size the customary Breton *arpent*. The majority contain only about one-third of that area.

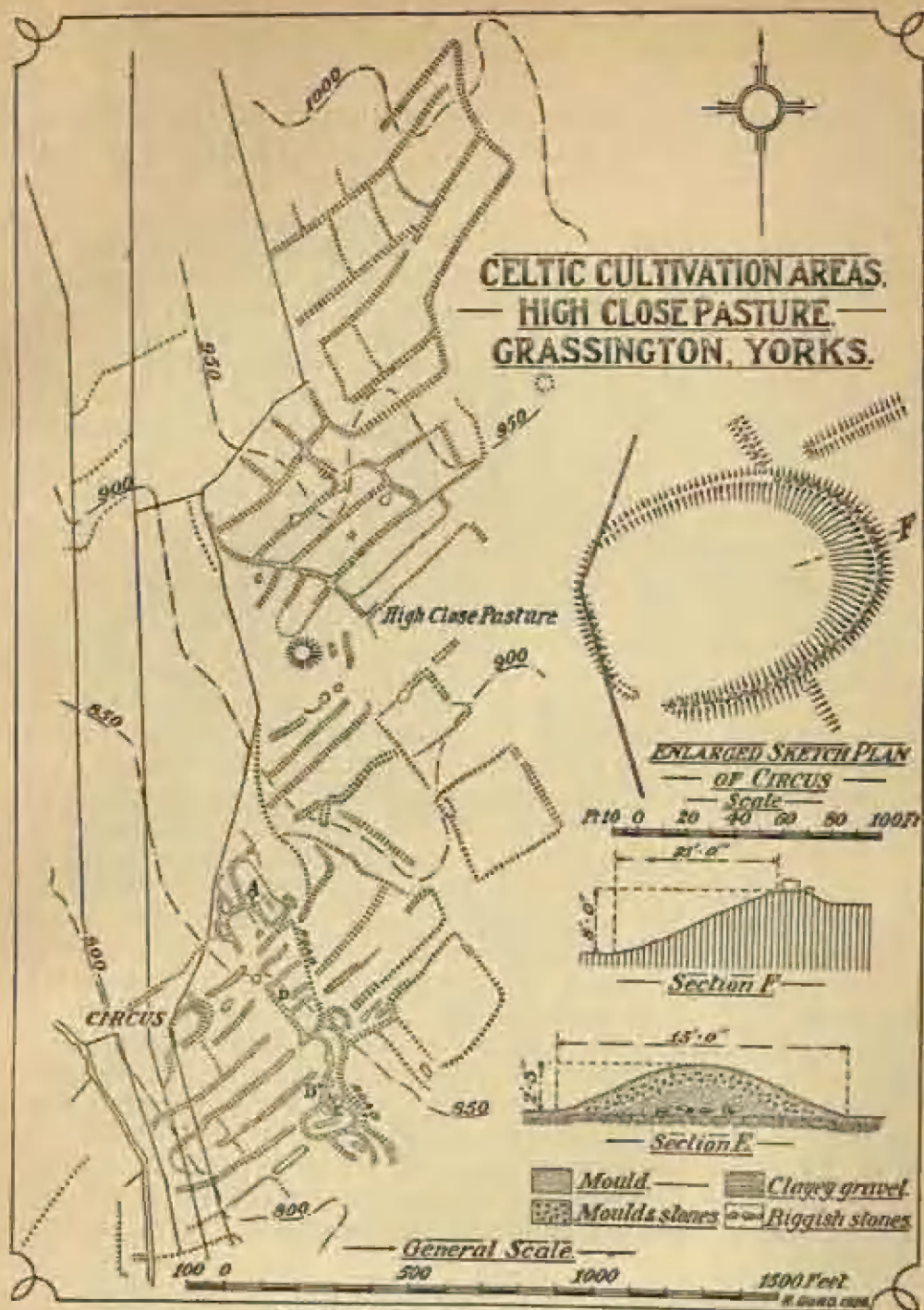
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practically pure mould, seventeen inches thick in the centre. In the middle of the bank, lying on the sandy clay subsoil, and therefore under the core of mould, were a few largish stones. So far from the bank having been formed by stones cleared from the fields, it was found that at least four times as much mould as stone was removed in cutting the trench. Nothing was found in the section cut beyond fragments of animal bones lying on the highest part of the mould core. Mr John Crowther tells us he was more fortunate when he opened a neighbouring bank (at D) a few years ago, for in it he found part of the lip of a cream coloured mortarium, which Mr Bushe Fox thinks probably belongs to the first half of the 2nd century, and also fragments of *terra sigillata* and other pottery of Roman date; unfortunately he did not preserve a note as to the levels in which these shards occurred.

No habitation area has been definitely located and no pottery suggesting the site of a village has been discovered. There are, however, a few small circular areas in connexion with the banks, which resemble hut circles, but are small, being only from nine to twelve feet in internal diameter. Some of these are ranged beside what looks like a contemporary roadway. The floors of two of these (A and B) were cleared out, and in each case revealed sixteen inches of mould mixed with small pieces of limestone and sandstone, under eight or nine inches of turf and mould, and lying on the subsoil of compact gravelly clay. In the mould-and-stone layer were several pieces of both limestone and sandstone which appeared to have been heated, but there were no traces of charcoal or of ash. The same layer yielded several fragments of animal bone, and the teeth of sheep. The only other object found was a piece of flat iron, six inches long, with the remains of a bolt in its side, suggestive of a latch to a door.

The facts that High Close Pasture is under grass, and that no rock crops up in the immediate neighbourhood, offer a probable explanation of the non-discovery of the habitation site of the people who cultivated these fields. A habitation site, which proved on excavation² to be of the early Iron Age, lies in a rocky area a mile to the NNW at the north end of Lea Green. It consists of a collection of hut circles and other enclosures surrounded by a low wall. It is possible that High Close Pasture was cultivated by the people who lived in this village, but it is much more probable that the cultivators lived nearer to their fields.

² Vide *First annual report of the Upper Wharfedale Exploration Committee.*



BASED UPON THE ORDNANCE SURVEY MAP
 By permission of the Controller of H.M. Stationery Office

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To the south and west of the lynched area lies what is known locally as 'The Druid's Circle', which in all likelihood was the place of communal meeting. It is an oval area 150 feet in length and 75 in breadth, situated on falling ground. The arena, if so it may be called, has been levelled. It lies eight feet below the surrounding bank to the north-east and east, to which it rises with a gradient of eight in twenty-one. The bank to the north is less high, while to south and west the arena, while separated from it by the bank, is above the level of the sloping hillside. The encircling bank is surmounted by a single or double row of stones for three-fourths of its extent. These are apparent to the east and south, but are less so to the west, as along this side a stone wall has been built actually on the bank of the Circus; the stones belonging to this bank are, however, quite clear below the footings of the wall. From north-east round by south to south-west the row of stones is double. Those in the inner row, forty-six in number, stand some eighteen inches high; they are about two feet wide, and are flat-topped, the line is almost continuous, and in parts the stones are placed edge to edge. A second row of smaller stones backs the larger ones. Entrance is obtained to the central level area by a gap to the south-west. No fosse surrounds this earthwork. To the south-east a lynchet four feet high runs off it, while to the north a low stony bank runs off in a NW direction, and one of the larger stony banks approaches to within a few feet from the north-east. The characteristics of this earthwork—a level central arena largely below the level of the surrounding country, encircled by a broad vallum which has an inner slope of easy gradient and no external ditch—bring it into line with those earthworks elsewhere which Mr A. Hadrian Allcroft believes to have been the sites of the communal meetings of early Iron Age and later peoples, while the line of stones surmounting so great a part of the surrounding vallum recalls the larger stone circles. Mr Allcroft has drawn our attention³ to Homer's description of the reception given by Alcinous to Ulysses at the gate of the city of Scheria, in which are depicted the king and city fathers sitting on the stones of just such a circle, and it may be that we have here in Grassington a work that blends the two types of ancient moots found in our country, namely the larger stone circle to be found in the north and west where stone is plentiful, and the earthen Circus met with in the chalk country and elsewhere where suitable stone is not forthcoming.

³ *The Circle and the Cross*, pp. 80 to 102, 225.

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The scanty evidence available suggests a Roman date for the cultivations on High Close Pasture. If this be correct, it is worth while noting the type of acre in prevalent use, and correlating it with what we know of ancient acres. If we take the mean dimensions of the High Close acres as 385×75 feet we may compare them with some of the Romano-British cultivations on Buckland Bank (Sussex),⁴ where 350, 380 and 400 feet are a frequent length of furrow, but in these cases the width of the plots varies from 120 to 200 feet. Looking elsewhere for analogues we find the Gwentian *erw* of South Wales in the 10th century measured 324×36 feet, while in Brittany a common dimension of the modern *arpent* is round about 300×60 feet, though the *customary* arpent, according to Seebohm, is as large as 520×104 feet. On Bodmin Moor, between Rough Tor and Brown Willy and Garrow Tor, and round about Fernacre Farm, are the remains of old cultivations, to the age of which there is at present no clue. Their dimensions bear a resemblance to those of the Grassington lynchets, the plots commonly being between 300 and 400 feet in length, and 50 to 120 feet in breadth.⁵

NOTE.—Since writing the above we have learnt from Mr Arthur Raistrick, PH.D., M.Sc., F.G.S., that he and Miss Chapman, M.Sc., have been studying the lynchetted areas at Grassington, and in Wharfedale and elsewhere, for some years. He tells us that they have found quantities of pottery in the cultivation areas at High Close Pasture, though not in the lynchets or banks themselves, and that the range of pottery is from late La Tène well into the Roman period, and includes a large number of pieces of *terra sigillata*. It is to be hoped that they will shortly publish the results of their extended observations not only of the early Iron Age settlements but of the neighbouring long-strip lynchets of Saxon and medieval times.

⁴ *Sussex Arch. Coll.* LXIV, 35, 49; *Antiquity* 1, 276, fig. 2.

⁵ For plans of the Bodmin Moor examples see *Antiquity* 1, 277, figs. 14-16.

Our Debt to Rome?

by O. G. S. CRAWFORD

WHAT do we inherit from our Roman conquerors? To this question some reply, 'Little or nothing', and some, 'The seeds of culture and religion'. The point has been debated endlessly, because it is an important one, with practical bearings. It is difficult to reach a decision because the decisive period, between 400 and 600 A.D., is one of the darkest in our history. Was there a 'break with Rome' more or less abrupt and complete, or did the traditions of Roman culture survive? By a strange irony, the protagonist of the complete hiatus was the late Professor Haverfield, whose life's work—Roman Britain—still lives in our midst; whereas the writer of today who is most vociferous in support of continuity is Mr Hilaire Belloc; and Mr Belloc is associated in the minds of us all rather with the Dark Ages and their tumultuous wars than with the Pax Romana.

The problem of the hiatus is one that lies on the frontiers between history and archaeology; for, in practice, if not strictly in fact, our recorded history begins with Gildas, Bede and the Anglo-Saxon Chronicle. Our knowledge of Roman Britain—and it is remarkable how much we have learnt even in the last twenty years—is mainly derived from excavation. Ancient writers are for the most part silent; their descriptions are meagre and scrappy; and, in the study of a particular region, archaeological evidence must be used. After the hiatus documentary sources begin to be available; but topography to some extent bridges the gulf.*

Throughout the Roman occupation the natives of southern Britain lived very much the same life as before. True, there were towns then, where none had been before, and, in prosperous agricultural districts,

* Those who desire a more general treatment of the subject should read Mr Randall's fine critique in the *Edinburgh Review*; see Bibliography, 16. Other references to the Bibliography are shown by figures.

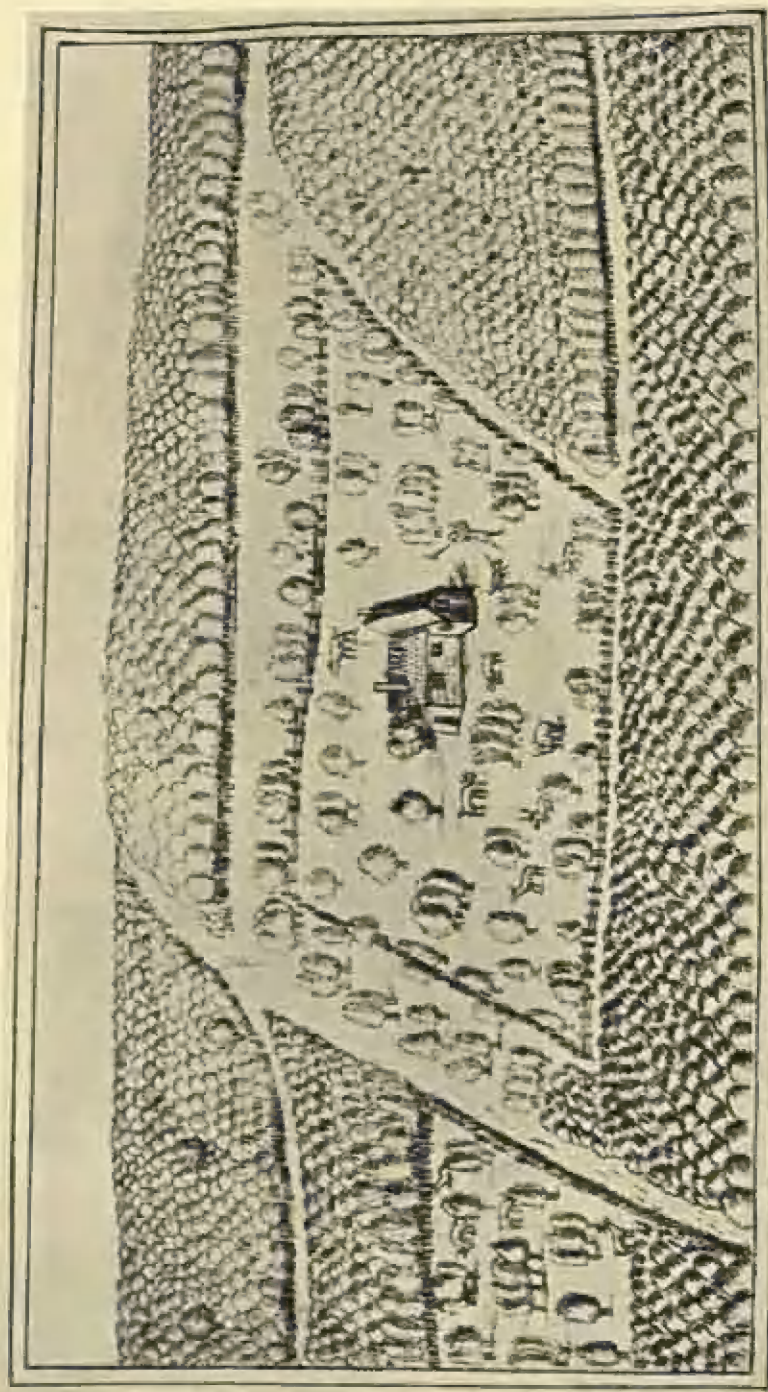
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remote from marauding Scots and Irish, the rich natives lived in fine houses. But the bulk of the population continued living on the chalk uplands where the earthen mounds of their villages still remain. Nowhere are these settlements so abundant and well-preserved as in Wessex; and within that district they are thickly scattered over Cranborne Chase and the Grovely Ridge. These two regions lie south-west and west of Salisbury; and today they contain the largest continuous woodlands in Wessex. For that reason they are peculiarly instructive to a student of the hiatus. But we must not anticipate. It is necessary, for our purpose, to ascertain not only the regions of densest population during the Romano-British period, but its precise topographical arrangements.

The villages invariably stood on high ground. The two best known are those of Rotherley and Woodcuts, both of which were thoroughly excavated by General Pitt-Rivers.¹ His reconstruction of the life of the villagers from the dry bones of relic-tables is a masterpiece, and his account has often been quoted.* We are not, however, concerned with the details of daily life. Enough that these upland communities were pastoral and agricultural; and that the whole of what is now Cranborne Chase is covered with the still-visible boundary-banks of Celtic fields. That is the explanation of those flint banks in woods which have puzzled so many inquirers. The whole area has reverted to its natural vegetation; and since there is a thick covering of clay-with-flints upon the chalk, both here and at Grovely,† the natural vegetation is a thick scrub of thorn, furze and oak, such as may now be seen on Handley Common. As a rule the villagers selected sites just off the clay, since chalk was obviously preferable for habitation; and this disposition is very evident on Grovely Ridge. Even so, elaborate drainage ditches were necessary, and there are other good reasons for believing that the rainfall was heavier then (*see* p. 208). There are remains of two large villages near Chettle; the earthen banks are wonderfully preserved, and the northern village is surrounded by cultivation-patches whose steep lynchets are most impressive. There was a large village on Blandford Race Down, and there is still one on Tarrant Hinton Down, where are two large round enclosures connected by a bank.⁴ Perhaps the best known is that on Gussage Hill; it was planned by

* As, for example, in 4, pp. 70-2.

† See bibliography, 2.



GROVELLY LODGE FROM A ROLL OF A.D. 1596, BELONGING TO THE EARL OF PEMBROKE



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Colt Hoare,³ and although partially obliterated by ploughing, its main features are still intact, and a recent air-photograph (taken by the writer) gives a good idea of its plan. There are several villages along the ridge which overlooks the Ebbles Valley ; on Bower Chalk Down are the remains, nearly ploughed out, of a large one. There are others which it is unnecessary to mention ; they have been described in Mr Heywood Sumner's survey of the 'Earthworks of Cranborne Chase'.⁴ There are probably many which are still unknown, or which may be revealed by air-photography and field-work. The important settlement at 'Bokerly Junction' (where the Salisbury-Blandford road cuts through the dyke) would never have been discovered at all had not the General selected that spot for his excavation of the dyke.¹ Moreover, some of the earlier (pre-Roman) settlements consisted solely of pit-dwellings, without, apparently, the usual banks and drainage ditches ; and unless two such had been found by Dr Clay and their contours revealed by his indefatigable spade, we might have been pardoned for not recognizing the true character of these inconspicuous sites.^{5, 6}

Now let us turn to the Grovely Ridge. Today, as for many centuries past, the middle of the ridge is covered by a large wood. There are, indeed, two such woods—one, between Fonthill and Upton Lovell, and the other to the east of it. Both are about the same size and are in many ways much alike ; but the western wood (now called the Great Ridge Wood, formerly Chicklade Wood) seems never to have been part of a royal forest. The eastern was the wooded core of Grovely Forest ; and since its medieval history is better known, I shall use it to illustrate the theme. But it should be borne in mind that what applies to Grovely probably applies with equal force to the Great Ridge Wood, which is full of earthworks.

The whole ridge between the Wylde and the Nadder is thickly covered with prehistoric and Romano-British remains—settlements, fields, boundary-banks and barrows. These remains are found equally in woodland and on downland and cultivation. They are best preserved in the woods and on the downs ; but thanks to that new instrument of research, air-photography, we may hope to recover much that was once thought to have been irretrievably obliterated by the plough. Today, as for many centuries past, Grovely Wood is encircled by a belt of downland, about half a mile wide in places, dividing the woodland from the ploughed fields of the valley settlements. Within the last hundred years, there have been encroachments on the pasture-lands by the plough ; but there are still many large stretches left. It is here that

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the best remaining 'Celtic' settlements are to be found.* Perhaps the most important is that called on the Ordnance map 'Grovely Earthworks'. These cover a large area on the north side of the wood, on Ebsbury Hill; and since Ebsbury is clearly the older name I shall use it here. The banks and ditches were observed and planned by Sir Richard Colt Hoare; but their true character was revealed by fieldwork with an air-photograph of the site. Studied in this way, the confused tangle easily fell into an orderly arrangement. It was clear that once there had been a large hill-top camp, defended by a triple line of ramparts, following the contour of the hill. In its original perfect condition it must have been most impressive, and may even have been the chief stronghold of the tribe. But the 'Pax Romana' made these fenced cities obsolete; and the inhabitants, or their successors, planted a new, open village on the slopes of the hill outside the stronghold. They threw down long lengths of rampart and ploughed over them; and the traces of their work remain to this day. The visible remains consist of a jumble of these lynchets, fragments of the great stronghold, and the banks of the later Romano-British village.

A somewhat similar sequence of events may have occurred at Hamshill on the opposite (southern) side. Here, however, it is not so certain that the Romano-British settlement was preceded by a native stronghold though it is difficult otherwise to explain the detached and now apparently purposeless 'Hamshill Ditches'. But for our present purpose it is enough that an important village stood here in Romano-British times. The whole area is covered with closely-set hut-platforms, yielding quantities of potsherds, pot-boilers and other relics; and in one place there are the remains of a flint wall.

The earthworks called Hanging Langford Camp and Church End Ring form a single whole and are the remains of a village. Mr R. S. Newall's excavations prove that it belongs to the early Iron Age; and the character of the pottery found suggests that it was inhabited immediately before the Roman Conquest and then abandoned. No

* I use the term 'Celtic' to describe both native villages of Romano-British age and those of the pre-Roman Iron Age which immediately preceded it. No other single word, except 'British', is strictly applicable to both; for 'prehistoric' cannot properly be used after the arrival of the Romans; and 'British' is meaningless. For the same reason I have used the word 'Celtic' to describe the fields associated with these villages. A single covering word is essential for convenience of description; but I am fully aware that even this adjective is unsatisfactory and open to criticism, particularly if the agricultural system so described proves to have originated earlier than I thought when I first suggested the name.

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coins and no pottery of Romano-British character were found except four small fragments of ' Samian '. Numerous objects of undoubted Romano-British character have, however, been found near by ; so that we may presume the existence of a settlement here during that period.

There is, however, no necessity to give a detailed catalogue of these Romano-British and earlier sites. They are well attested by finds, by existing remains and by the innumerable Celtic fields still visible everywhere around. Practically the whole area between Grovely Wood and the modern arable on both sides is covered by lynchets ; and they are to be seen also in many of the ploughed fields. So far as finds are concerned, besides the evidence of potsherds, there is the well-known discovery of a hoard of silver coins, made in 1906. The exact site of its discovery, for which I am indebted to Colonel Hawley, was on the line of the Ebsbury ramparts, on the north-western brow of the hill. The hoard itself was dispersed, after the British Museum had taken what they wanted ! ' The date of its concealment was about A.D. 408. ' Further, the Roman road from Old Sarum to the Mendips ran along the top of the Ridge, and no doubt contributed towards the economic prosperity of the villages beside it. This road was in existence at least as early as A.D. 60, and perhaps ten years before that ; and besides lead there came along it coal from the Somerset mines, some of which has been found by Colonel Hawley in the Romano-British village at Stockton, and on other contemporary sites.

These upland villages of Cranborne Chase and Grovely were in no way abnormal. Similar topographical conditions obtained in Hampshire ; and although there cultivation has swept away most of the villages, the ancient fields, long preserved by a mantle of woodland, may still be seen. They are particularly abundant in Freefolk Wood and also in the north-western part of the county. On Salisbury Plain, and in parts of Hants and Dorset, the absence of clay-with-flints produced a slightly different result when the land reverted after the abandonment of the settlements. Where there was no clay or loam, the natural carpet of down turf spread again over the surface, gradually ousting the rank weeds that took root first in the loose soil. So, instead of woods we have now open downs : and it is therefore easier to see the whole village system with its fields and boundary ditches, especially from an aeroplane. But in all essentials the disposition of the villages was the same over the whole chalk region. Not a single one of them,

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so far as I am aware, lay down in the bottom of a valley, except possibly on the line of a Roman road.

Now look on the other side of the picture. We have been told by Mr Belloc that (to put it concisely) there was no hiatus.* It is the object of this essay to show, by a cold presentation of the facts, that there was; and that, in this part of Wessex, at any rate, the break between the Roman and Saxon periods was the most complete in our history. True, he admits that 'religion itself',—by which he probably means the Christian religion—'was almost if not entirely destroyed' in Eastern Britain, and that 'the whole fabric of Roman civilization appears to have been dissolved there'. But from this collapse he excepts 'such irremovable things as the agricultural system, the elements of municipal life, and the simpler arts'. He concludes that 'it would have been impossible to recreate a sound agriculture, and to re-found the arts and learning . . . had it not been for the monastic institution': and he believes that 'the Roman estate was, presumably, the direct ancestor of the Manor'.*

We need not discuss the survival or extinction of municipal life, for there were no municipalities in Cranborne Chase or Grovely. Nor can we deal with the simpler arts. Both these aspects have been ably treated by others.* But agriculture is right in the line of fire, and the evidence from our region is very clear and convincing. The adjective 'irremovable' which Mr Belloc uses, is peculiarly unfortunate; for, as we shall find, the arable fields of the Saxon settlers were laid out *de novo*; the position selected round Grovely was the lower slope of the valleys, near the settlements down in the valley, and well removed from the upland villages and their fields.

We have no documentary evidence of the foundation of the existing villages of south Wiltshire. We do not know the year or even the century when any single one of them was founded. But it is reasonable to suppose that the majority of the more important parishes were founded and their bounds determined during the seventh and eighth centuries. The first county town of Wiltshire was Wilton, the Wylve-town, which gave its name to the county, Wilton-shire.¹² Like all the county towns of Wessex, it was a market town, with a fair as well; and it became one doubtless because it was conveniently situated at the meeting-place of the Nadder and Wylve valleys. Here converge the roads connecting the villages strung like beads along

* See especially 10-14 in the bibliography.

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them at intervals of a mile or two. They are placed on both sides of the valleys ; and there are consequently two parallel roads along each. These were the *theod-herewiths*, the people's highways, for they connected the villages with each other ; they must have been in constant daily use. They also led ultimately to the market-town (in old English called ' port ') ; and one of them at least—that on the south side of the Nadder valley—was called ' port-herewith ' for that reason.¹⁷

The present system of roads and villages has developed out of the Anglo-Saxon system.¹⁸ During fourteen centuries minor additions have been made, but the skeleton is the same. We might compare its growth to that of a man from childhood to old age. While the system is young, new tissue is added and new links form to connect them. With maturity there is a certain amplification, a tendency to incorporate what is structurally unnecessary. As old age comes on, decay sets in and the arteries gradually cease to function. The pulse of the country beats feebly when its life-blood is drained by the towns ; and the time is ripe for its rebirth. Thanks to this wonderful continuity of country life, we are able to reconstruct with surprising completeness the face of the land as it was when the present moribund system was young. Some such reconstruction is required in order to prove the main thesis of this paper ; for when we have made it we find evidence of a *complete reversal*. In Romano-British times and before, the uplands were the regions of densest population ; with the coming of the Saxon settlers there was a complete and abrupt change. No settlements are found, in the two regions we are concerned with, except in the valleys ; the uplands are completely deserted. The best evidence of this is the modern Ordnance map (upon which those reproduced here are based) supplemented by Domesday, old records generally and placenames. I have marked on these maps *all* settlements which are known to be established from of old, and whose foundation dates from before the Norman Conquest ; and, as will be observed, every single one of them is situated in a valley, beside a spring or stream, and generally close to the meads. What a difference between this and the earlier system of upland villages !

We are not entirely dependent upon inference, however, for several of the villages had their bounds written down before the Norman Conquest, and some of these have been preserved.¹⁹ The points in these bounds can still be identified, for the names of some have survived, while others refer to the truly irremovable features of topography such as springs, streams and valleys. We find that the bounds of parishes

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in the Wylve Valley meet those of parishes in the Nadder Valley along the top of Grovely Ridge. Thus, in the tenth century, Baverstock and Langford had two points of contact.* These two valley-groups met along a common frontier line, formed by a long pre-Saxon boundary-ditch called Grimsditch. This arrangement allowed for arable land nearest to the village, and woodland at the other extreme. In between lay an area of downland suitable for pasturage. Thus the Romano-British conditions were completely reversed. The frontier between the two Saxon groups ran through the middle of the area which before had been most thickly populated.

The same change took place in Cranborne Chase. There the frontier between the Wiltshire villages in the Ebble Valley on the north and the Dorset villages on the south ran right through the middle of the Romano-British region. The county boundary actually passes within a few yards of two Romano-British villages, one on Woodcuts Common and the other (Vindogladia) at Bokerly Junction. The disposition of the Dorset villages is a little different from that of the Wiltshire ones. Instead of being strung along a valley, they are planted at the head of a series of parallel valleys, running down to the river Allen. The arrangement mars the symmetry which elsewhere prevails; but the difference is one of detail only, and even so none of the modern villages is found on a hill or on the site of an older pre-Saxon one.† Documentary proof is again available, and it reveals the antiquity of the existing régime. The bounds of Handley, as recorded in A.D. 956, coincided throughout with the present boundary of that parish. The north-western part is also the county boundary; it is called the Shire Rack, and is 3½ miles long. This stretch formed part of the southern boundary of a manor or group of manors called Chalk (æt Ceolcum), whose bounds along the Shire Rack, recorded in 955, contain three of the same bound-marks as Handley.§ For a distance of nearly ten miles the bounds of Chalk follow the county boundary. At the eastern end the bounds of Chalk march with those of Martin, whose bounds, included within those of Damerham, were recorded in A.D. 940-946. There are again several points in common, proving that these two land-units also had a common frontier in the tenth century.

* That is so still; but further east a separate extra-parochial area called Grovely Wood has been carved in modern times out of the extremities of four parishes.

† With the exception of Ashmore; see below, p. 184.

§ They are Tinkley (tilluces leage), Bica's seat (bican setl) and Mistleberry (mealeburg and micelburh).



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I have now set down as plainly as possible the evidence on both sides of the hiatus. Before going further, let me summarize it.

We know the sites where villages stood in both the Romano-British period and the Saxon. We find, on the one hand, villages on the uplands and none in the valleys ; and on the other, villages in the valleys and none on the uplands. We find, further, that the Saxon valley-settlements fall naturally into groups, with a common frontier ; and this common frontier runs right through the middle of two Romano-British settlement-areas, and the fields associated with them. In one case the common frontier is also a county boundary ; and passes through the middle of two Romano-British villages, both of which, as it happens, have been thoroughly and exhaustively excavated. In neither village has a single object of Saxon date been found ; and there is reason to suppose that they were abandoned early in the fifth century and never reoccupied. No post-Roman objects, and no examples of the easily recognized Saxon objects, have ever been found in a Romano-British village of Wessex. That is not due to failure to recognize them as such, for brooches, pottery, spears, metal ornaments and the like are abundantly found in every Pagan Saxon cemetery.¹²

I wish to call particular attention to the behaviour of the Wilts-Dorset county boundary with regard to the two groups, because it provides a clue to the way in which the southern English counties were formed. In Cranborne Chase the county boundary coincides with and follows the frontier between two valley-groups ; and it cannot therefore be older than the valley-villages themselves. A similarly close relationship between county boundaries and settlement-groups can be observed elsewhere ; and I have already touched on the subject.* It is one that would well repay investigation, but it is too complicated to be dealt with here. I allude to it merely because I want to show that our county system is closely interwoven with the system of valley-settlements and groups, whose foundation *de novo* I attribute to the Saxons.

In stating a case one tends to overstate it ; and one must beware of proving too much. Let me now deal with some of the evidence on the other side. The case for the hiatus is far too strong to be in any danger of being seriously weakened ; the few exceptions, when their character is examined, merely strengthen it.

In maintaining that there was a complete break of continuity I do not wish it to be thought that I support the theory of wholesale massacre

* See 20, appendix C.

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or extinction. That there was a good deal of slaughter is certain ; there was also emigration on a large scale, to the West and across the Channel to Brittany.¹¹ But that some Celts lingered on is proved both by the survival, often to this day, of Celtic place-names and of a pre-Saxon type of humanity. The names which last longest are those of rivers, woods and hills. The name of the Wylze is pre-Saxon ; the early form *Guilou* (*Asser*) comes, according to Stevenson, from a Celtic *Wilavia* ; which is represented today in Wales by two streams *Guilly* and *Guili*. The suffix in *Teffont* and *Fovant* and the prefix in *Fontmell** is *funta*, a Celtic loan-word borrowed by the Romano-British people from the Romans, and meaning, of course, a spring (Latin *fons*). One suspects that *Menewood*, the old name for the large wood now called *Fovant* and *Compton Chamberlayne Woods*, may be Celtic ; a road in *Grovely* is called *Menewaie* on the old map of 1576 and in earlier perambulations ; and the name *Meon* occurs elsewhere three times, in surroundings consistent with a pre-Saxon origin. But there is little else Celtic in the place-names of the *Grovely* district.¹² Even the hundreds, which have so often been fathered with a pre-Saxon origin, almost all have Saxon names. (Out of the twenty names of the hundreds of south Wilts, twelve are wholly Saxon, seven have Saxon suffixes and prefixes which may equally well be Saxon too ; and only one, *Warminster*, has a Celtic prefix, and that is the name of the stream, the *Ware*, on which the town of *Warminster* stands).

There are several Celtic names in *Cranborne Chase*. The river-name *Gussage* (*Gussic*) is certainly Celtic or earlier. It occurs also in *Devonshire* as the name—spelt *Gissage* on the Ordnance map—of a tributary of the *Yeo* in *Zeal Monachorum*. The word *Chettle* (OE : *Cheotele*) occurs in more than one part of the Chase. *Pentridge*, just outside the Chase, represents *Pennocrucion* ; it is a high isolated hill with a camp on it, and therefore the word is applicable (from *pen*, hill, or perhaps 'principal', and *cruc*, a mound). *Tarrant*, a river-name, is pre-Saxon. Other pre-Saxon names in or near the Chase are *Verne* (ditch), *Cleare* (?), *Man* (combe), *Crichel* (*Kerchel*), *Stirchel*, *Mel*(bury) and *Wim*(borne). The only known Romano-British name, *Vindogladia* (at *Bokerly Junction*), has vanished and left no trace. In a most interesting paper¹³ published after this article was composed, Dr *Zachrisson* comments on this

* The order here is Celtic and corresponds with the modern Welsh, in which language it would be *Fynnon Mell*.

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'cluster of Keltic place-names' in Cranborne Chase, noting the abundance too of 'British villages' here, but observing (as we had already observed also) that 'in no instance do their sites coincide with those of the English towns and villages' with the possible exception of Shaftesbury. He had already suggested that 'the Britons [*i.e.* the Celtic-speaking natives] were forced to abandon their hill-forts* and to adopt the Saxon mode of life'—thus accounting quite satisfactorily for this 'non-survival of habitative names of Celtic origin'. Dr Zachrisson writes as a philologist, and naturally he has no first-hand topographical acquaintance with the remote region of Cranborne Chase. It is therefore all the more pleasant to find that his conclusions are in perfect agreement with our own, which are based on archaeological and topographical facts as well.

These few instances are not enough to prove any considerable survival of a Celtic-speaking population. Some of the words may well be pre-Celtic, and even go back to Neolithic times. When we remember that between us and the Saxons there intervenes the Norman invasion and the whole of the Middle Ages, we may well wonder that so little change of nomenclature has taken place. Had any large proportion of Celtic words survived, they would have occurred far more frequently in contemporary Saxon land-boundaries. As it is, the names there are nearly all Saxon. There, too, the presumed Celtic words denote natural features.

Of anthropological evidence for a survival of the natives it is difficult to speak, for no systematic observations have been made of the modern population. Dr Beddoe, a careful and penetrating observer, believed, however, that the sub-stratum of the population of Wiltshire was non-Teutonic in type.²¹ Even if this be so, it may be accounted for in many ways, without in the least upsetting the validity of the arguments set forth above. I have never supported a theory of complete physical annihilation, which is absurd on the face of it! If there were survivors, as there certainly were, they must have become amalgamated, as slaves and serfs, in the Saxon régime. The pre-Saxon element, numerically weak, may have gradually emerged as the generations passed. Such an occurrence is not unlikely, according to the laws of heredity, and has even been suggested quite recently by an eminent anthropologist.

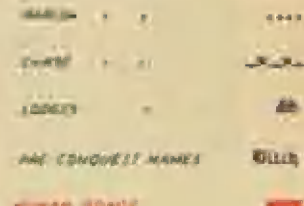
* Dr Zachrisson's use of this word is unfortunate. The Britons lived for the most part in open villages; the hill-forts belong to a pre-Roman period. But the argument is in no way affected.

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Finally, there still exist a few old hill-top settlements which are undoubtedly exceptions to the rule that the Saxon villages of Wessex were placed in valleys. Though proof is difficult, it is quite possible that some of these are the direct descendants of Romano-British villages occupying the same site. The outstanding example in the region we are considering is that of Shaftesbury. The town is almost unique in that it stands on the summit of a steep-sided hill, an outlying bastion of the chalk hills of the Chase. The name shows that there were defences (*burh*), probably prehistoric; and an alternative name—Alcester, formerly Alyncester—is still applied to the south-western part, and may indicate Romano-British occupation. Not far away is the remote village of Ashmore, 700 feet above the sea. These are the only two hill-top settlements anywhere in these parts; but east of Salisbury there are a few abnormal hamlets round Winterslow. There is an interesting group in north-west Hants—Crux Easton, Ashmansworth, Faccombe, Linkenholt and Buttermere (Wilts); and in east Hants and central Berks they are numerous. On the borders of Berks and Wilts are Baydon, Upham and Snap; and on these sites are the evident remains of Romano-British villages, whose character is proved by numerous finds, earthworks and 'Celtic' fields all around.

These exceptional villages have certain features in common. Only Crux Easton and Upham have the suffix *-ham* and *-ton*; and the age of all is certainly as great as that of the valley-settlements (Crux Easton was in existence in 796). They are often associated with large ponds, where we may suppose the flocks and herds, if not the people, obtained drinking water. Such a pond is often to be found in or near Romano-British villages, and was, we may be sure, an invariable accompaniment. The feature is often preserved in the name itself. In Saxon this was *mere*; and the suffix appears in Ashmore, Ashmansworth (*Æscmere*, ninth century), and Buttermere.

These ponds, often called dew-ponds, are still common in regions where the chalk is covered with clay, and where surface drainage can be directed into them. The Saxon bounds of the parishes of north-west Hants contain many examples of these ponds (no less than five are mentioned in the bounds of Hurstbourne Tarrant, A.D. 961: see my 'Andover District', p. 81). Generally speaking, these exceptional upland villages occur in regions remote from, or unclaimed by, a big valley-group. They are often on watersheds, whether of rivers or settlements. We may suppose that when the valley-people had divided up the land, there remained over in certain districts a residuum of



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unclaimed upland. Such an occurrence was quite certainly exceptional; it was usual for the out-bounds of one valley-group to march with those of the next. But near the headwaters of the valleys were irregular regions not required by any group; and here survived, or grew up, the rare hill-villages. Had this survival occurred wherever Romano-British villages existed, there would have been now groups on the top of the Grovely Ridge and in Cranborne Chase. But there was no room for them there; and they were squeezed out. They are found only in the backwoods of early Saxon times.

The waste lands of Cranborne and Grovely developed into forests in medieval times. Cranborne was exceptional for it belonged to a subject;²⁴ but Grovely became a normal royal forest. We know nothing of the exact limits of the woods in pre-Norman times; but it is unlikely that there was any topographical change after 1066, except perhaps a more precise definition of the boundaries between wood and pasture. The change effected by the Norman Conquest was primarily a legal one; certain harsh restrictions were imposed and officers appointed to enforce them. Forests were areas within which these special forest laws applied. In the early Norman days an attempt was made to turn most of southern central England into 'forest' land; but eventually a compromise was arrived at, and by 1300 the 'forest' areas had been defined by perambulation. We find, on examining these perambulations, that the areas thus enclosed—the real cores of forest land in the modern sense—were for the most part devoid of villages.

The process was simply a part of the gradual transformation that took place all over England, from the democracy of the earliest settlers to the tyranny of feudalism. To begin with, we may believe, every community had unrestricted rights over the whole waste land within its boundaries. Though 'waste' in the sense that it was not cultivated, such land was of great economic value. It provided material for house-building, thatching, fencing and hurdling (the objects being known each by their names, such as speeke-rods, breeding-rods, fould-shoars, wrethers, etc.); snapping-wood for fuel; pannage for swine and herbage for cattle. These rights were jealously guarded; and at Grovely they were kept fresh in mind by a pilgrimage to Salisbury Cathedral, whither the people of Great Wishford went every year at Whitsun 'in a dance, making their claim to their custom in the Forest of Grovely in these words—"Grovely ! Grovely !! and All Grovely !!!"'

In the spacious times of great Elizabeth there remained but little of the waste land to be freely enjoyed; and even those rights that

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rustic tenacity so stoutly maintained were hedged about with exactions extorted by parasitic forest officers. Of the old hunting rights there survived only a claim to 'one fat Buck' annually (divided between two villages) 'to make merry withal amongst the Neighbours'. Even for this the ranger demanded payment of 'one white Loaf and one Gallon of Beer and a Pair of Gloves, or Twelve pence in money for the whole'. If the ranger 'do not bring nor send the fat Buck', the villagers could go and take a whole for *each* village; but the said ranger was not then invited to share it and make merry withal.²⁸

That these were but the shadow of ancient rights is a safe inference. Unfortunately, history is almost entirely silent on the status of the forests before the Norman Conquest. From this very silence we may infer that, even if the royal prerogatives existed in some form (which is doubtful), they were at least less damaging to the faithful lieges. That the community exercised a right to use the waste is proved by a charter of 940* which expressly mentions the village's hey-bote on Grovely. (Hey-bote was the right to take material for fencing). That this right should have to be specifically mentioned is perhaps the best evidence that it was already threatened in the tenth century; that such mentions are rare is proof that the danger of serious encroachment from above was still comparatively remote. Indeed, the abuse of communal rights was a direct and inevitable outcome of the feudal system. The Norman lord of the manor claimed a private right to ownership of all the soil of his manor including the waste, a claim 'which ran counter to all notions of communal property which were bound up with ancient usages as to the waste'.† The outcome was a compromise; customs harmless from the lord's point of view were allowed to continue, but common usages were taxed and the arrogant claim asserted by the extortion of certain privileges. Thus was robbery legalized in the Good Old Times!

We have traced the history of two small parts of England from the days of the Romans down to those of Elizabeth. The treatment has necessarily been summary; but the facts have been examined far more closely than was required for this brief statement of them. We have seen the reversion to nature of an area that once teemed with busy Celtic husbandmen. Next, we have seen that same area supplying the rustic needs of other free communities; and we have seen these

* 28, no. 757, Hanging Langford: 'tunes heges bot on Grafan lea'.

† 29, p. 311.

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privileges withdrawn during the Ages of Faith, known to historians as the Dark Ages. One system of agriculture has disappeared and been replaced by another totally different both in kind and in position. The Romano-British villages disappeared and were replaced by communal Saxon villages ; and these in turn were transformed into communities of serfs by the Norman invaders. Thus have irremovable things moved before our eyes. After this, we begin to wonder by which channel it was that the stream of Roman culture reached us. That some elements in our civilization are derived from ancient Rome no one could deny ; but that the stream of continuity was unbroken in this island cannot for a moment be maintained by an informed student of our history.

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The Swedish Excavations in Cyprus

by EINAR GJERSTAD

THE Swedish archaeological expedition in Cyprus worked last year at Lapithos on the north and at Karavostassi, the ancient Soli, on the north-west.

At Lapithos 23 tombs from the early and middle Copper Age and 20 tombs from the early Iron Age were opened and examined. The former cover a period from the end of early Cypriote I to the beginning of middle Cypriote II. The main part of the finds consists of a very representative series of pottery: red polished I-IV ware, black polished ware, black slip I-II ware, white painted I-IV ware. The later tombs have yielded a rich collection of tools and weapons, bracelets and rings of copper, finger-rings of silver and gold, 8 necklaces of paste beads, idols of terra cotta and one marble idol, etc. The gold rings (early Cypriote III) represent the first gold found in Cyprus of the early Copper Age. One necklace (early Cypriote III), consists of 156 globular beads of various sizes arranged in 8 rhythmic series, with one large bead in the middle of each series. Another necklace (middle Cypriote I) consists of 64 large globular beads and more than 500 small cylindrical beads inserted between the large ones. A third is of round, fluted and double-conical beads in symmetrical arrangement. The idols are of the plank-shaped type. One represents a mother holding a baby in her arms, another a mother and a baby in a bed, and a third a man and a woman in a bed.

The anthropological material is of great importance: the human skulls found in the tombs will help to solve one of the main questions of Cypriote prehistory—the origin of the Cypriote metal culture and of the people who developed it.

The excavation of the early Iron Age tombs has brought us near the solution of another main problem of Cypriote prehistory—the Greek colonization of the island. It is well-known that from the late Cypriote II period (contemporary with late Helladic III) Cyprus was in close contact with the Aegean culture and many Mycenaean vases (late Helladic III) have been found in late Cypriote II tombs. But the great question is whether the late Helladic III pottery gives evidence of commercial connexions between the Aegean and Cyprus or of a Mycenaean colonization of Cyprus. As the shapes and the decoration

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of the late Helladic III pottery found in Cyprus are identical with those of the late Helladic III pottery in Greece and as, moreover, there are no signs of mutual influence of the native Cypriote (base-ring and white slip wares, etc.) and the foreign late Helladic III pottery I consider the latter to have been imported altogether. First, in the late Cypriote III period there is an assimilation of the sub-Mycenaean and the native Cypriote pottery; this gives evidence of a Greek colonization of the island and so I consider this to have taken place in the late Cypriote III period (1200-1000 B.C.). The early Iron Age tombs at Lapithos seem to verify this conclusion. They are, in fact, the tombs of the first Greek colonists in Cyprus. Already the shape of the tombs gives evidence that Mycenaean Greeks have been buried in them; they are identical in type with the Mycenaean chamber-tombs though of a smaller size. We know that the Mycenaean culture in Greece disappears at the end of the Bronze Age (c. 1100 B.C.) and at the same time the Mycenaean tomb-type disappears. How is it then possible that this tomb-type occurs in Cyprus in the early Iron Age, c. 200 years later? This can only be explained by the supposition that the Greeks colonized Cyprus before the end of the Mycenaean period, brought their own tomb-type with them to the island and continued to cut their tombs according to the traditional scheme, even after the Mycenaean culture had disappeared in Greece. Moreover the finds themselves give evidence of the Mycenaean tradition, especially the pottery: many of the shapes and ornaments remind one of the Mycenaean art in its latest stage. Some of the tombs are very rich. In one of these a magnificently decorated lady was buried. Her head-dress was covered gold: six rondels, three Mycenaean rosettes and five rectangular plaques with impressed ornaments, representing a naked goddess with up-lifted hands and a head of the same goddess, and her dress was fastened by a pin with a head of a large rock-crystal. Another lady in another tomb had a similar head-dress decorated by four plaques with stamped ornaments representing a naked goddess on a rosette; she had double ear-rings; the waistcoat was fastened by two pins, one with a golden head in shape of a pomegranate and the other with an amber head; both hands had finger-rings and the left hand held an ivory comb with incised ornaments. As no tombs of a pure Mycenaean type have been found in Cyprus in the late Cypriote II period or before that, these Lapithos tombs seem to be archaeological proof that the Greeks colonized Cyprus in the late Cypriote III period, just at the end of the Bronze Age. The excavation of the late Bronze Age necropolis of Lapithos will give the final answer.

THE SWEDISH EXCAVATIONS IN CYPRUS

At Soli, the theatre has been excavated. The stage-building consists of a long *skene* and a narrow *proskenion*. The *skene* was built in two stories but only the lower part of the walls is now preserved. These were decorated with marble slabs and the front and the side-walls were surrounded by columns. In the Byzantine period the theatre was deprived of its marble decoration, and only fragments of the columns and the marble slabs have been found. The orchestra as well as the cavea is semi-circular. The cavea consists of three tiers, of which the first and second are cut out of the rock, while the third has been built up on a filling of earth and stones between two semi-circular enclosing walls. This third tier together with the upper part of the walls has been destroyed. The theatre has two entrances, one western and one eastern, both opening to the diazoma. The western entrance is cut out of the rock as a passage, the sides of which are lined with walls of well-cut blocks. At the top these walls ended in a vault. These vaults have now been demolished, but we can reconstruct them from fragments of a marble cornice, which once decorated the border of the vaults. The eastern entrance is in principle built in the same way, but as the rock slopes steeply there, a complex of supporting walls had to be built in order to support the pressure of the vaults and the upper part of the theatre.

The theatre was built in the Hellenistic period but it has been used and rebuilt in the late Roman period. As an example of the later Greek culture in Cyprus the theatre of Soli is of great importance to the history of culture. But perhaps still more interesting than the theatre itself is the discovery of a Greek temple within the theatre walls: in the filling between the walls encircling the third tier architectural fragments were found which proved to belong to a Greek Doric temple of the archaic period. Blocks of the temple cella and the architrave built in the masonry of the eastern entrance of the theatre were found. Archaic terracotta statuettes were also found in the débris. It is evident that when the theatre was built a Doric, archaic temple was demolished to serve as building-stones and at the same time the votive equipment of the temple—the terracotta statuettes—was used as a filling material. In a trial trench about 100 mm. west of the theatre we came across foundations of a Greek, archaic temple, which still remains to be excavated. Do these architectural fragments found in the theatre belong to this temple? Only through further excavations and careful measurings can this question be answered. But so far our hope of finding Greek cultural monuments in Soli has been realized.

The Recent Finds at Beisan

by ALAN ROWE

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EVER since the year 1921 the Palestine Expedition of the Museum of the University of Pennsylvania has been engaged in the excavation of the ancient city of Beth-Shan, at present called Beisan, which lies in North Palestine at the eastern end of the Valley of Jezreel. The site consists of an enormous mound, named Tell el-Hosn, or 'Mound of the Fortress', and an extensive cemetery—one of the largest in Palestine, which has been proved to contain burials of all periods, from the early Bronze Age to the Byzantine era. In the tell itself have so far been found the remains of nine superimposed citadels or city-levels:—I, Arabic (mosque), Crusader, etc., 636 A.D.—19th century A.D.; II, Byzantine (circular church), 330 A.D.—636 A.D.; III, Hellenistic (temple), Jewish and Roman, 301 B.C.—329 A.D.; IV, Late Ramesside, Philistine, Israelite, Assyrian, Scythian, New Babylonian, Old Persian, etc., 1224 B.C.—302 B.C.; V, Rameses II (two Canaanite temples,—northern one, 'House of Ashtaroth' of 1 Samuel, xxxi, 10, and southern one 'Temple of Dagon' of 1 Chronicles, x, 10), 1292 B.C.—1225 B.C.; VI, Seti I,—two levels, late Seti, early Seti (Canaanite temple), 1313 B.C.—1292 B.C.; VII, Amenophis III, etc. (Canaanite Temple), 1411 B.C.—1314 B.C.; VIII, pre-Amenophis III, 1446 B.C.—1412 B.C.; and IX, Thothmes III (two Canaanite temples,—southern one for 'Mekal, the god of Beth-Shan', and northern one for his female counterpart), 1501 B.C.—1447 B.C. It will thus be seen that there have been discovered altogether nine sacred buildings on the tell, that is to say, an Arabic mosque, a Byzantine circular church, a Hellenistic temple, and six Canaanite temples. All the Canaanite temples have been unearthed since the year 1925, the two temples of Thothmes III being excavated in the 1927 season.

SOUTHERN TEMPLE OF THOTHMES III. The southern temple of Thothmes III is about 138 ft. in length from south to north. It is made

PLATE 1



GENERAL VIEW OF NORTHERN AND SOUTHERN TEMPLES OF THEOPHANES III, DEIR SERAN, 590-647 A.D.

THE RECENT FINDS AT BEISAN

of brick with stone foundations, and consists of the following main divisions :—

(1) Inner sanctuary. This is a roughly rectangular room with a brick altar for cult objects and a stone altar for meat offerings. Upon the former altar, which incidentally supports a stone basin for blood libations, were set a hollow cylindrical stand for holding the flowers and fruits placed in it during the festivals associated with the renewal of vegetation; a beautifully decorated pottery chalice of unusual design; a gold covered figurine of a god; a pottery figurine of the goddess Ashtoreth; a magnificent amethyst scarab of Sesostri^s I, XIIIth dynasty, 1970–1935 B.C.; a Hittite bronze dagger with curved blade; an ivory cosmetic pot on a base; and many other important objects. Near the stone altar we discovered the shoulder-blade of a bull which formed part of an actual sacrifice made in the sanctuary. Just to the east of the two altars was lying a rectangular panelled altar-stand of Cretan type, with a cross in high relief, emblematic of 'divinity', on its top.

(2) Sacrificial-altar room. This is just to the south of the sanctuary, and has a great altar of sacrifice, with two steps leading up to it from the entrance passage of the sanctuary. In the top of the altar is the channel for conveying the blood to an outlet at the east of the altar, and also the socket for the peg to which the animal was tethered. Against the altar we found the two horns of a bull, while near its west side (but in the courtyard, which is west of the inner sanctuary) was lying a collar-bone of a bull and a sacrificial dagger. The bull, as shown by all the skeletal remains in the temple, which must surely have belonged to one and the same animal, was about three years old (cf. 1 Samuel, i, 24, 25, R.V., margin).

(3) Courtyard. This contains three rectangular table-like structures of brick, on two of which were doubtless cut up the carcase of the sacrificed bull. The other table, being much smaller, was perhaps used for holding the implements with which the flesh was divided (cf. Ezekiel, xl, 42). In one part of the courtyard, and not far from the above mentioned sacrificial altar, were discovered the socket of the pole upon which the carcase had been dressed, and also a heavy bronze pendant which was doubtless hung from the neck of the bull before it was sacrificed. On one side of the pendant is represented a lion jumping on a bull.

(4) Room north of inner sanctuary. The purpose of this room is not clear. Upon its walls, and also upon those of other walls in the

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temple, are low pedestals of brick which were doubtless supports for the posts holding the boards with which the temple seems to have been screened.

(5) Southern corridor and mazzebah. On the south side of the temple is a long corridor leading eastwards to a small room containing a mazzebah or sacred column emblematic of the god of the temple. This mazzebah is cone-shaped in appearance and is of basalt. Before it is a libation cup of the same material, which was for the purpose of catching the libations of blood poured over the column. The floor around the mazzebah and the cup are of brick. Near the mazzebah was lying an Egyptian stele which is of the utmost importance, as it provides us with the actual name of the local god who was probably worshipped in the temple itself—'Mekal (or, Mekar), the god of Beth-Shan'. This is the first time that we have met with the name of this deity.

NORTHERN TEMPLE OF THOTHMES III. This building is roughly rectangular in shape and has a small dividing wall running across it from south to north. On its eastern wall are some brick pedestals, while in its northern side is a flight of five steps leading down to a lower level. The building is not yet fully cleared. Nothing of importance has yet been discovered in this temple, but from a room to the south of it came a bowl with an undulating serpent represented on it in high relief. This object is of great interest as it indicates that serpent-worship, so common in Beisan during the reigns of the later Egyptian kings who held the fort, was already practised there in the time of Thothmes III. Beisan was certainly a centre of a great serpent-cult in Palestine, and it is just possible that its ancient name Beth-Shan, or 'House of Shan', was associated in some way with the old Mesopotamian serpent-deity Shahan, Sakhan or Shakhan.

Among other discoveries made during the 1927 season, may be mentioned that in the level of Amenophis III we came across a Babylonian cylinder seal of the 19th-18th century B.C., inscribed in cuneiform with the following words; 'Manum, the diviner, and servant of the god Enki (Ea)'. The figures of the god and the diviner are represented on the seal, which is extremely well cut. Other finds from the same level comprise:—(1) A Hittite cylinder seal bearing the figures of two deities, an elephant, an ass, and a vulture, as well as the Hittite hieroglyphs reading 'god' and 'fort' respectively; (2) models of serpents on stands; (3) a pottery jar surmounted by the head of the dwarf-god Bes or Ptah-Seker; and (4) three cylindrical cult objects—one with the

PLATE II



MAZZEDAH, OR SACKED COLUMN OF BASALT, FOUND IN SOUTHERN TEMPLE OF TROTHMES III, BEISAN

facing p. 194

PLATE III



STELA OF MERKAT FOUND IN THE SOUTHERN TEMPLE OF THOTHMES III, HELWAN

THE RECENT FINDS AT BEISAN

head of an elephant, one with the head of a plumed Ashtoreth in high relief, and one with the head of a bull.

NOTES ON ILLUSTRATIONS

Plate I (facing p. 192). General view, looking south-west, of the northern and southern temples of Thothmes III found at Beisan, 1927. The northern temple is not yet fully cleared.

- 1 Inner sanctuary with brick altar (A) and stone altar (B), the former for cult-objects and the latter for meat offerings.
- 2 Room with altar of sacrifice.
- 3 Corridor leading eastwards to mazzebah or sacred column, emblematic of the deity.
- 4 Courtyard with three brick tables or pedestals for cutting up the animal sacrifices, etc. A socket (C) for the pole on which the carcase was dressed, is in the south-east corner. (The pole is modern).
- 5 Room north of inner sanctuary. In its west wall is a pole socket, the use of which is not clear. (The pole is modern).
- 6 Corridor leading to northern temple.
- 7 Room, partly excavated, to west of corridor.

Plate II (facing p. 194). Mazzebah or sacred column of basalt, found in the south corridor of the southern temple of Thothmes III at Beisan, 1927. In front of the mazzebah is a stone cup (also of basalt) for catching the blood libations which were poured over the column. Both cup and column are on a brick floor. Looking north.

Plate III (facing p. 195). Stele of 'Mekal, the god of Beth-shan', found in the southern temple of Thothmes III at Beisan, 1927; made for the builder AMEN-EM-APT by his son PA-RA-EM-HEB.

Upper register :—To the left is Mekal seated on a throne holding the WAS-sceptre of 'happiness', and the ANKH-sign of 'life'. He is bearded; on his head is a conical crown with two horns and two streamers attached to it. In front of him stand AMEN-EM-APT and PA-RA-EM-HEB, each offering him a lotus.

Lower register :—To the left are four lines of hieroglyphics (the last one of which is missing) which contain a prayer to Mekal for life, health, etc., on behalf of AMEN-EM-APT. To the right is an altar stand, and also the figures of the father and son mentioned above (both broken away).

The Alexandrian Library

by GEORGE H. BUSHNELL

THE main centre of literary activity was transferred from Athens to Alexandria about 250 B.C., and this city, which had been founded by Alexander in 332 B.C., under Ptolemy Philadelphus became a great book mart.

As far as the history of libraries is concerned, the Alexandrian library was comparatively late. The East had known libraries thousands of years earlier. The Greeks themselves had founded their first state library about one hundred years earlier; this was established by the Greek government at Heracleia, on the southern shore of the Black Sea, some time before 350 B.C., in the days when the great Alexander was a little boy.

The rise of literature at Alexandria was unlike that of Athens and Rome. In these two cities it was of slow growth and developed gradually. Ptolemy the second was both ambitious and energetic and he attracted a vast number of writers and students to Alexandria. These writers and copyists produced standard editions of the great literary works on which almost all the other libraries came to depend. The 'Alexandrian editions' were circulated throughout the Hellenistic world.

From these editions are descended most of the manuscripts which are now preserved in the famous libraries of our day and which have served as 'originals' for our printed editions of Homer, Xenophon and others.

It is related that Ptolemy refused to provide the Athenians with food during a famine except on the condition that they would let him have certain authenticated copies of the tragedies of Aeschylus, Sophocles and Euripides. When he did receive them, however, he was sufficiently generous, since he paid for the works with the sum of fifteen talents in silver in addition to sending the Athenians the stipulated amount of corn.

The Alexandrian museum was an institution for the advancement of learning, and became a kind of 'Round Table' for erudite men. Its buildings were situated in the royal quarter of the city, adjoining

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the palace, and included cloisters, gardens, and a common hall for meals. Eminent literary and scientific men were invited to become members of the society, and annual stipends were allowed them by the king. Here they were to devote their lives to the Muses, and, at first at least, there was probably no provision made for teaching. The museum resembled the philosophical schools at Athens in some respects, noticeably in being a 'Temple of the Muses', a *Movveiov*, headed by a president, or 'priest of the Museum', who, at Alexandria, was appointed by the government. In close conjunction with the museum was the Great Library. There was also a smaller library, which contained 42,800 volumes. In the course of time a Jewish college, a Christian college and other foundations were established at Alexandria.

Alexandria was in Macedonian times the great centre—or rather one of the two great centres—of scientific research. Classical learning, mathematics, anatomy, astronomy, mechanics, medicine, natural history, and whatever else of science there was, found a home in this city.

From the palace at Alexandria a short walk across the park led to the library, which contained about 500,000 rolls, or 'books'. Josephus in his 'Antiquities' (book XII, chapter 2), relates an anecdote, which may or may not be true, concerning the acquisition of books for the library. To quote from Whiston's translation :

'The occasion was this:—Demetrius Phalerius, who was library-keeper to the king, was now endeavouring, if it were possible, to gather together all the books that were in the habitable earth, [see map of the world according to Eratosthenes, *c.* 200 B.C.] and buying whatsoever was anywhere valuable, or agreeable to the king's inclination (who was very earnestly set upon collecting of books) ; to which inclination of his, Demetrius was zealously subservient. And when once Ptolemy asked him how many ten thousands of books he had collected, he replied, that he had already about twenty times ten thousand ; but that, in a little time, he should have fifty times ten thousand. But he said, he had been informed that there were many books of laws among the Jews worthy of inquiring after, and worthy of the king's library, but which, being written in characters and in a dialect of their own, will cause no small pains in getting them translated into the Greek tongue : that the character in which they are written seems to be like to that which is the proper character of the Syrians, and that its sound, when pronounced, is like to theirs also ; and that this sound appears to be peculiar to themselves. Wherefore he said, that nothing hindered

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why they might not get those books to be translated also ; for while nothing is wanting that is necessary for that purpose, we may have their books also in this library. So the king thought that Demetrius was very zealous to procure him abundance of books, and that he suggested what was exceeding proper for him to do ; and therefore he wrote to the Jewish high-priest that he should act accordingly . . . [The king] gave order to Demetrius to give him in writing his sentiments concerning the transcribing of the Jewish books ; for no part of the administration is done rashly by these kings, but all things are managed with great circumspection. On which account I have subjoined a copy of these epistles, and set down the multitude of the vessels sent as gifts (to Jerusalem), and the construction of every one, that the exactness of the artificers' workmanship, as it appeared to those that saw them, and which workmen made every vessel, may be made manifest, and this on account of the excellency of the vessels themselves. Now the copy of the epistle was to this purpose :—" Demetrius to the great king. When thou, O king, gavest me a charge concerning the collection of books that were wanting to fill your library, and concerning the care that ought to be taken about such as are imperfect, I have used the utmost diligence about those matters. And I let you know, that we want the books of the Jewish legislation, with some others ; for they are written in the Hebrew characters, and being in the language of that nation, are to us unknown. It hath also happened to them, that they have been transcribed more carelessly than they should have been, because they have not had hitherto royal care taken about them. Now it is necessary that thou shouldst have accurate copies of them. And indeed this legislation is full of hidden wisdom, and entirely blameless, as being the legislation of God : for which cause it is, as Hecateus of Abdera says, that the poets and historians make no mention of it, nor of those men who lead their lives according to it, since it is a holy law, and ought not to be published by profane mouths. If then it please thee, O king, thou mayest write to the high-priest of the Jews, to send six of the elders out of every tribe, and those such as are most skilful of the laws, that by their means we may learn the clear and agreeing sense of these books, and may obtain an accurate interpretation of their contents, and so may have such a collection of these as may be suitable to thy desire" '.

' When this epistle was sent to the king, he commanded that an epistle should be drawn up for Eleazar, the Jewish high-priest, concerning these matters'.

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Josephus further tells us that the translations were made, approved by Demetrius after he had read them, and then handed to the king, who 'adored them; and gave order that great care should be taken of them, that they might remain uncorrupted'.

This is the alleged origin of the famous Septuagint, so called because it is said that seventy Rabbis were engaged upon it.

Athenaeus says that amongst the works procured for the library were those of Aristotle, which were purchased from Neleus. The works of Sophocles, Euripides, and Aeschylus were borrowed from the Athenians, copies being taken of them and sent to the owners in place of the originals.

A notable literary change took place in the days when Callimachus, the poet and philosopher, ruled over the library. Writers forsook the great dramatic themes of war, adventure and catastrophe. In their place pastoral poems became the vogue and scholars wrote of simple country scenes and incidents, of shepherds dreaming beside murmuring brooks, and so on. It was then that Theocritus produced his idylls.

In addition to pastorals, however, a kind of realistic comedy was written in which the peculiarities and weaknesses of citizens were depicted in a humorous, mocking manner. Menander, writing at Athens, perhaps was first among the writers of this 'new comedy'.

Under the administration of Callimachus, who was probably the greatest of the earlier librarians, a catalogue was prepared. It filled one hundred and twenty volumes and was a complete index to the authors and titles of all the books of any value, in the estimation of Callimachus, in the library. The title given to this work was 'A Catalogue of all sorts of things'. This most sensible librarian is credited with the saying that 'a big book is a big nuisance', meaning, of course, that a long work in a single roll was naturally very difficult to handle. With this view impressed upon his mind he adopted the method of dividing works into several rolls, each of which was called a 'book', in the sense of a 'part'. In this way arose the division of the Iliad and the Odyssey, the history of Herodotus, and other famous works.

A code of laws for banquets, written by the courtesan Grathaena, is mentioned in this catalogue, and also works by Aegimius, Hegesippus, and Metrobius on the art of making cheese-cakes!

As I have already said, Ptolemy, hearing of the wisdom of the Hebrews, sent for the sacred books, which he was instrumental in

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having translated into Greek for more general use. He also collected the books of the ancient Egyptians, of the Chaldeans and even of the Romans, employing great numbers of scribes to translate them.

There is a great divergence of opinion among the early writers as to the number of books the library actually contained. Georgius Cedrenus says 100,000; Seneca reports 400,000; Josephus tells us 200,000, which was to be increased to 500,000; Aulus Gellius (a writer worthy of more general attention than he is accorded) says that the number rose to 700,000; Ammianus says the same. Isidore, strangely enough, gives 'seventy thousand books', but perhaps this is a slip for 700,000. Eusebius gives 100,000 at the death of Philadelphus; Epiphanes, earlier, says 54,800. Orosius tells us 400,000 volumes were burnt with the fleet by Julius Caesar. Usually, I think, the figure is put at 500,000.

Tzetzes, writing in the twelfth century, says, apparently on the authority of Callimachus, that 'the outer library' contained 42,000 rolls, and the inner library 490,000 rolls. Further, 'from an examination of the catalogue', that of the latter 90,000 were 'unmixed rolls', *i.e.* containing only a single work each; while 400,000 were 'mixed' rolls, *i.e.* containing two or more distinct works each.

It does not seem to be generally realized, however, that the rolls (*volumina*) here spoken of contained far less matter than an ordinary printed volume of average size. For instance the 'Metamorphoses' of Ovid in fifteen books were counted as fifteen volumes and one Didymus is said by Athenaeus to have written 3,500 volumes. This consideration may account to some extent for the discrepancies and will, at least, bring the larger numbers within the bounds of credibility.

Strabo describes the library itself in this manner:—'It has a colonnade (*peripatos*), a lecture room (*exedra*), and a vast establishment where the men of letters who share the use of the museum take their meals together. This college has a common revenue and is managed by a priest who is over the museum. . . . ' There are no remains of the building itself now in existence, but, judging from the descriptions which have survived, it was fairly typical of the general Greco-Roman style.

It seems to be fairly well established that among the first librarians at Alexandria were Zenodotus, Demetrius of Phalerum, Callimachus, Eratosthenes, Apollonius, Aristophanes of Byzantium, Lycophron of Chalcis, Alexander Aetolus, and Aristarchus of Samothrace.

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I do not know any work which gives all these names but I think they certainly must be accepted as librarians at Alexandria during a period of about 100 to 150 years. Few historians agree as to the order in which they occupied the position but it is obviously futile in most cases to discuss whether one preceded or succeeded another, for some of them most certainly worked together. In those days, as now, more than one competent librarian laboured in a library. Thus we find that Alexander Aetolus was in charge of the tragic poetry, Zenodotus arranged the epic, and the lyric, and Lycophron was responsible for the classification of the comic poetry.

One brief biographical note may not be out of place, however. Lycophron, the celebrated author of the *Alexandra*, was the adopted son of Lycus the historian of Rhegium, sometimes known as Butheras. He was born about 330 B.C. and went to Alexandria about 284 B.C. Great enmity had apparently existed between Lycus the historian and Demetrius of Phalerum, librarian to Ptolemy I. Demetrius had endeavoured to persuade the king from giving the succession to the crown to his son by Berenice, but none the less Ptolemy II (Philadelphus), on the abdication of his father in 285 B.C., came to the throne. On the death of Ptolemy I in 283 B.C. Ptolemy Philadelphus had Demetrius put under ward. He did not live very long after, however, being bitten in his sleep by an asp. The death of his father's enemy apparently proved a benefit to Lycophron when he was at Alexandria. In the library he seems to have been responsible for the arrangement of the comic poets. Further than this practically nothing is known of his life, and of his death we know nothing at all unless we are to assume from Ovid that he was slain by an arrow:

Utque cothurnatum cecidisse Lycophrona narrant,
Haereat in fibris fixa sagitta tuis.

The one point which particularly concerns us, however, and which may be gathered from the foregoing summary, is that Lycophron was not a librarian at the Alexandrian Library until after Demetrius had been relieved of his position, that is, not until the reign of Ptolemy II.

A note on the classification of the library may be interesting. Callimachus is sometimes referred to as the 'father of book classification'. Properly the appellation perhaps belongs to Aristotle, but of practical systematic classification he may be regarded as the first. The earlier libraries of Egypt, Babylonia, Assyria, etc., were in

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many instances classified but unfortunately we do not know much definitely either of the schemes or of the classifiers.

From casual references in Dionysius of Halicarnassus, Athenaeus, Suidas, Diogenes Laertius and others, some slight idea of the scheme of Callimachus may be obtained. It is not possible to say very much about it, but as far as one can see the scheme seems to have been arranged more or less in the following classes and sub-divisions:—

Philosophers

Geometry

Medicine

Lawmakers

Feasts

Historians

Orators

Poets

Epic

Tragic

Comic

Dithyrambic

Miscellaneous writers

Birds

Fishes

Cheese-cakes

Various writers on the same subject were arranged alphabetically under that subject.

No doubt a number of smaller libraries existed in Alexandria but the only one of which it is necessary to speak was the one connected with the Temple of Serapis. I do not think its exact position in the Serapeion has yet been determined. It is supposed to have contained about 42,000 books. Anecdotes connect this library with the library at Pergamum as well as with the great Alexandrian one, but it is not at all certain that there is any truth in them.

A great portion of the library at Alexandria was burnt (probably accidentally) when Caesar, following Pompey into Egypt, was attacked

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by a mob in the streets of Alexandria. Despite many 'definite' statements by various writers it is still uncertain exactly how the building caught fire. The destruction took place in 47 B.C. but it seems unlikely that the library was completely burned. In any case it could not have existed later than 272 A.D. when the Brucheion quarter of Alexandria was completely razed to the ground during Aurelian's invasion.

Thus it is difficult to see how the Caliph Omar's army could have destroyed the library in 642 A.D., although even to this day there are certain scholars who persist in believing the story.

The fable itself was narrated originally by Gregorius Bar-Hebraeus about 600 years after the taking of Alexandria. His rather impressive version runs as follows: 'John, the grammarian, came to Amrou, who was in possession of Alexandria, and begged that he might be permitted to appropriate a part of the booty'. 'Which part do you wish for?' asked Amrou. John replied, 'The books of philosophy which are in the treasure (library) of kings'. Amrou answered that he could not dispose of these without the permission of the Emir Al-Moumenin Omar. He wrote to the Emir, who replied in these terms: 'As to the books you speak of, if their contents are in conformity with the Book of God (the Koran), we have no need of them; if, on the contrary, their contents are opposed to it, it is still less desirable to preserve them, so I desire they may be destroyed'. Amrou, in consequence, ordered them to be distributed to the various baths in Alexandria to be burnt in the stoves; and after six months not a vestige of them remained.

John of Alexandria was dead before the date when this dialogue is said to have taken place! The late Dr W. E. A. Axon told this story of the fable well in his article in the *British Almanac and Companion*, 1876, but by far the best examination of the legend is the work of P. Casanova, who read a paper on the subject before the Académie des Inscriptions et Belles-Lettres on 28 March 1923.

It is somewhat remarkable to note that Seneca is almost savage in his denunciation of the Alexandrian library. He describes it as being rather a pompous spectacle than a place of study; a work of extravagance without even being learned extravagance. Nevertheless it is difficult to estimate our own debt to the work of the first two Ptolemies, whatever may have been their reason for amassing the collection. We may at least give them the benefit of the doubt.

Within the last few years the admirable Loeb edition of Callimachus has been issued. For the benefit of those who may be interested it

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is only right to mention that pages 6-11 of this edition are devoted to a discussion of the question of Callimachus' librarianship. It is not definitely proved in the estimation of Professor A. W. Mair that Callimachus ever was librarian of the Alexandrian Library. The professor quotes some of the authorities for the common assumption and correctly points out that they do not *prove* anything of the kind. At the same time, after reading his notes I must confess that my own opinion is unchanged. Students of library history must here, however, as in similar instances, study the older authorities themselves and draw their own conclusions, not, of course, without paying due regard to the views of authorities like Professor Mair.

Notes and News

PILLOW-MOUNDS

Mr R. C. Bosanquet writes :—Apropos of *ANTIQUITY*, 1, p. 432—mounds alleged to be artificial rabbit-warrens. There are such groups in Wales : see the Inventories of the Royal Commission on Ancient Monuments in Wales.

(1) Montgomeryshire inventory, no. 463. Parish of Llanfihangel Yng Ngwynfa : so-called 'Soldiers' Graves'. Add to what is printed there that one measures 30 feet by 14 feet, another 40 feet by 12 feet, and that when I saw them one *was* tenanted by rabbits.

(2) Radnorshire inventory, no. 327. Parish of Llanelwedd. 'Long Barrows' on sunny side of a hill sloping to river Wye. Described as having 'a rudely formed stone trench' running through the centre from end to end. The rabbit-theory was reported as follows by our inspecting officer : 'a belief is current among some of the residents that they were formed as breeding-shelters for rabbits on their first introduction into the country nearly a century ago'.

(3) Radnorshire, no. 355 A. Parish of Llanfihangel nant Melan. Over 30 long mounds on south side of a hill.

(4) Cardiganshire. Inventory not yet made. Similar mounds stated to exist in parish of Llanfair Clydogan, see text relating to (1) above. 'On higher ground'.

(5) Monmouthshire. Parish of Dingeston. These too are on sloping ground. I saw them many years ago.

Rabbits were introduced into the Highlands by Sir Hector Mackenzie, 4th baronet (1758-1826), of Gairloch. His grandson, Osgood Mackenzie, in *A Hundred Years in the Highlands* (Edward Arnold, 1921), quotes the following from an uncle's account :—

'We carried the hamper [of rabbits] to some sandy banks . . . busy hands and spades soon built up twenty or thirty foot refuges of turf, like six-inch square drains . . .'

I suspect that people trying to establish a stock of rabbits on unclaimed hillsides were advised to make such tunnels in mounds thrown up for the purpose. Hence the 'rudely formed stone trench'

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in the Radnorshire examples. Sporting literature of the period may confirm.

[The subject of pillow-mounds is dealt with very fully in the introductory chapter of *Wessex from the Air*. The evidence is conflicting, but the rabbit theory seems to be supported by a number of independent witnesses. Editor].

EXPLORATIONS IN THE LIBYAN DESERT

Two officers of the Sudan Administration, Mr Douglas Newbold and Mr Kennedy Shaw, have just returned from a journey of 1000 miles. They started from El Obeid at the end of last October and crossed the Libyan Desert in a great curve, of which the most westerly point was the oasis of Nekheila (lat. $18^{\circ} 52' N.$, long. $26^{\circ} 6' E.$). Here (and elsewhere) on the route, rock-pictures, pottery and stone implements were found. Nekheila is a large depression of about 50 square miles containing a salt lake some 4 acres in area, and a number of groves of date-palms. It was only discovered in 1925 by the Citroen car expedition of Prince Kemal El Din Hussein, accompanied by Dr Ball (Director of Desert Surveys in Egypt); but no detailed account of their journey has yet been published. Mr Newbold and his companion stayed here for ten days, and made a survey of the oasis. Rock-pictures betraying Libyan influences were discovered, and it is noteworthy that the camel is never depicted. A second and smaller oasis was discovered some 20 miles NE of Nekheila; this was previously unknown.

On 7 December the party took the open desert for Selima, on a curved route to the west of the famous Arba'in Road, a distance of 275 miles without grazing or water. This country was a complete blank on the map and equally unknown to the Arab guides; the direction of march was controlled by compass bearings and theodolite observations for latitude. This desert must be one of the most desolate bits of the world's surface. Low sandstone ridges alternated with sandy wastes, flat and featureless as a gramophone disc, and with hardly a trace of vegetable or animal life save for a dozen patches of dried grass and the bodies of dead migrant birds.

This stage of the journey took 20 marches, ten days. It was hoped that either on or near the route taken some trace of the legendary oasis of Zorzura might be found. This has been reported by Arabs

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from Egypt for over a century but no one has seen it and it may prove to be mythical. No sign of it was discovered.

On 16 December Selima (lat. $21^{\circ} 17' N$, long. $29^{\circ} 18' E$) was reached in safety and after a short stay the party proceeded to the Nile opposite Abri, and thence to Wadi Halfa.

The above account (abridged from one published in the *Sudan Herald*, 14 January 1928) has been communicated by Mr Douglas Newbold, who has already made many interesting discoveries in the desert. A description of his previous journey in 1913 appeared in *Sudan Notes and Records*. In our next issue we shall publish a fully illustrated account of these results, which are of great archaeological importance (see *ANTIQUITY* 1, 353-5). In this article Mr Newbold will give a general account of his discoveries on both journeys and the conclusions which may be drawn from them.

HISTORICAL CYCLES

We have received the following criticism from Professor Sir Flinders Petrie :—

The observations of Mr Collingwood on Historical Cycles appear to mix two irrelevant subjects, the personal choice of style, and the repetition of similar periods. The differences of opinion about preference in art or in subjects have no bearing on questions of repetition. Whether a person prefers the coins of Heraclitus or of Syracuse, the sculptures of Constantine or the Aeginetan marbles, the pictures of the catacombs or Botticelli, the spelling of Bellicia or Felicia, has no relation to the fact that each of these styles had precursors or successors at about equal intervals of time. The only reason for taking the defining point at the close of archaism and the complete freedom of expression of form, is because that is the point most free of personal prejudice and the most precisely notable. The result would be the same if we took as a defining stage the rise of mechanical copying, or the least resemblance to natural forms, only the definition would be much less precise. In *Revolutions of Civilisation* I gave as full examples of the fall as of the rise of art (define which as you prefer) ; each is good evidence of the successive changes. To take the simile which is put forward, a ' man's shadow moves with every movement he makes ', but it falls in the same direction, at the same time of day, wherever he stands. It will show him the length of the day and the time of day, wherever he may repeatedly observe it. So observation of any

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recurring stage of art serves to show the length of a cycle and the stage of its development.

It is by the combined study of the art, economics and politics of the past that we can record the reasons for the changes which took place, and it is quite untrue that if we knew more of the Dark Ages they would be light. Bede in the Dark Ages is a much better historian than the Augustan Lives, the kings of the Heptarchy are better described than the emperors : yet we do not hesitate to speak of the Dark Ages. To take an obvious case : look over a series of inscriptions in historical order of the first six centuries—as at the Lateran, and see the steady change in regularity of writing and spelling :—is this passing from light to darkness, or from darkness to light ? When we clear our minds to see the problem of repetition of cycles in all forms of expression, apart from that of personal preferences, we reach to the beginnings of a scientific history.

METEOROLOGY AND ARCHAEOLOGY

Dr J. P. Williams Freeman writes :—

In an article published in the *Meteorological Magazine* of January 1928, it is suggested that help might be given by antiquaries and historians in determining the climatology in different periods of history ; and it is pointed out that such help would not be necessarily disinterested, since varying climatic conditions must have had an important bearing on social conditions. The article is occasioned by the very interesting paper of Mr George M. Meyer on ' Early Water Mills in relation to changes in the rainfall of East Kent ' published in the *Quarterly Journal of the Royal Meteorological Society*, October 1927. Mr Meyer calls attention to the evidence of lawsuits and disputes as to the water-supply of mills, and to the silting up of the mouths of small rivers owing to the diminished scour of their streams at certain periods of the Middle Ages. His conclusion is that the streams of East Kent were more powerful at the end of the eleventh century than they are today, that there was a definite shortage of rainfall about 1275, and that the rainfall about 1303 was much less than in 1217. The article also points out with other evidence that in the two centuries between 1051 and 1250 twenty-three floods are recorded and twenty-one droughts, whereas in the century and a half 1250 to 1400 the records give only fourteen floods, but twenty-seven droughts. Such facts as these taken together may well help meteorologists towards determining the relative rainfall of the centuries.

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Several recognized facts in archaeology leave no doubt as to the great lowering in the general level of the water-table in the chalk from Romano-British times onwards, though so far it has not been possible to find definite indications as to the periods of maximum diminution.

General Pitt Rivers in excavating the well in the Romano-British village at Woodyates, Dorset, found a Roman bucket at the bottom of it, 60 feet above the level to which modern wells have to be sunk in the immediate neighbourhood.

Comparison as to the present summer sources of our winter-bournes with their highest springs, which run only in the wettest seasons, points unmistakably in the same direction. It will be found that these highest occasional springs are very frequently, perhaps usually, close to the site of some ancient vill or manor, frequently of Saxon origin, and sometimes of Roman. It is impossible to suppose that such sites were chosen for the sake of a spring which only broke out at intervals of several years; they must at that time have been perennial. An examination of a small piece of country of about six miles by four in north-west Hampshire shows that the average level of the highest occasional springs is 50 or 60 feet above that of the present perennial sources of the streams. Such instances give us no dates of the retreat of the water-tables, but it might be possible to find instances of early medieval mansions having been built for the first time at a known date at the sites of springs which are now dry. Other evidence of the retreat of the ground water is seen in the spring-ponds of the chalk—deep conical pits sometimes 20 or 30 feet in depth which are occasionally found near the heads of valleys now dry; in one, or two, water still rises in their bottoms in the very wettest years, and they have evidently been dug and deepened since early times to keep pace with the water as it gradually retreated.

It is noticeable how many fifteenth and sixteenth century houses in England are built on the north slopes of hills and face north, in marked contrast to nearly all Roman sites. This may have been due to a warmer climate in these centuries. Andrew Boord, priest and physician, writing about 1542, says:—‘Then he that wyll buylde, let hym . . . ordre and edefye the howse, so that the pryncypall and chyefe prospectes maye be Easte and West, specyally Northeast, Southeaste, and Southwest, for the mervdiall wynde, of all wyndes is the moste worste, for the South wynde doth corrupte and doth make euyll vapowres. The East wynde is tēporate, fryske, and fragraunt, the West wynde is mutable, the North wynde purgeth euyll vapowres. Wherefore better it

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is of the two worste ^ⁱ the wyndowes do open playne North, than playne South'.* And in Gough's edition of Camden's *Britannia* (first published in 1586), speaking of Oxford, it is said:—'The plain in which it stands is defended by woody hills, which shut out on one hand the unhealthy South wind, and on the other the violent West wind, and admit only the gentle East and the North wind which drives away all pestiferous vapours'. These preferences seem hardly appropriate to our present climate.

The attempt to estimate the rainfall of former years by the breadth of the annual rings of old trees can hardly be included in archaeology, nor does it seem likely to be of much value in this country.

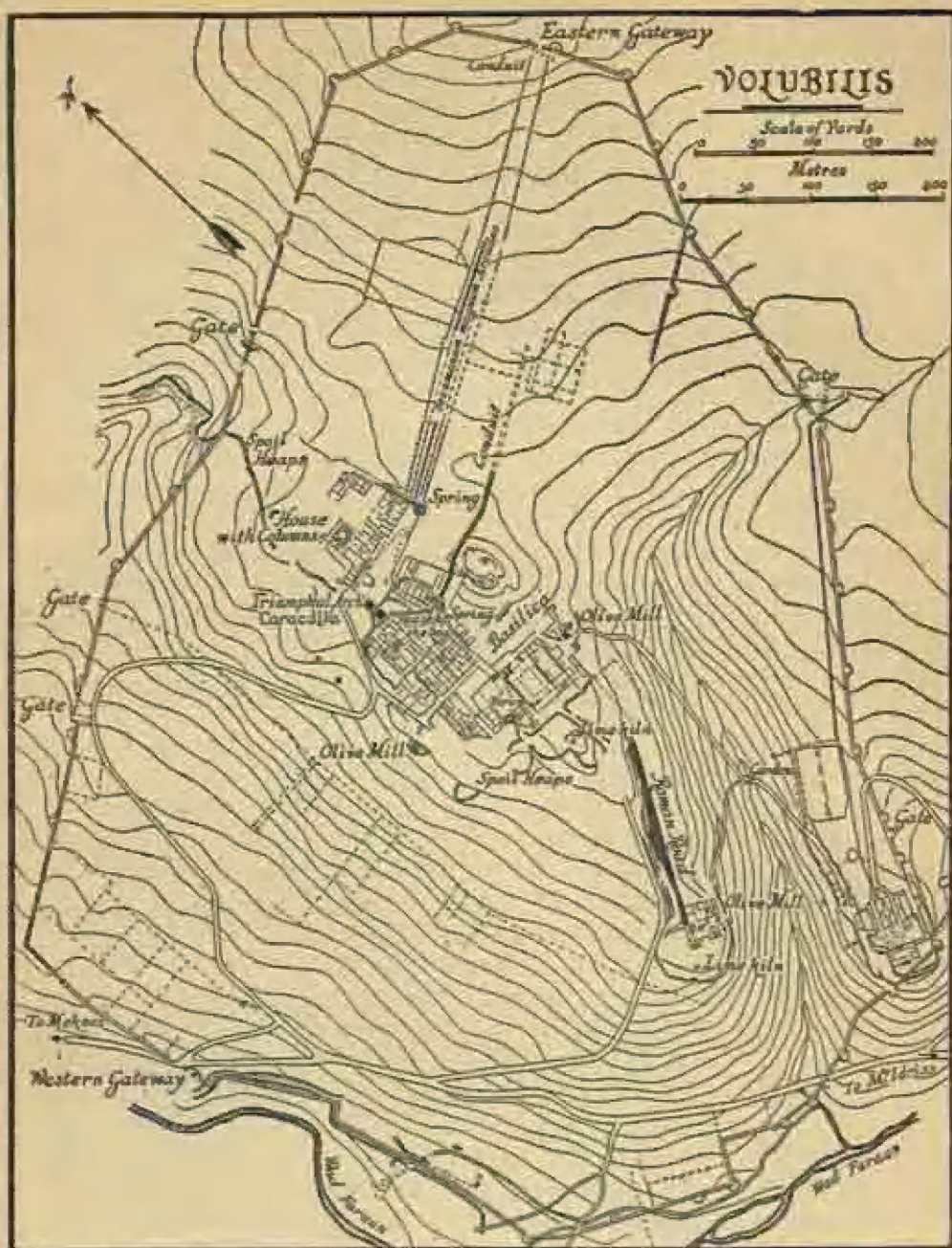
VOLUBILIS

In a recent number of *La Géographie* there was published a paper on the Roman city of Volubilis, by M. Salesses, a retired Colonial Governor. The following summary of his article has been revised by M. Salesses himself, to whom also we are indebted for permission to reproduce his map, which has been redrawn.

Traces of Roman occupation are, in general, much less numerous in Morocco than in Algeria or Tunisia. There is, however, one outstanding exception, namely Volubilis, a deserted Roman city, about two-thirds of the way from Rabat to Fez, $18\frac{1}{2}$ miles north of Meknes and $43\frac{1}{2}$ miles west of Fez, on the line of the route from Taza which connects Algeria with Morocco. Its ruins cover about 97 acres, and the Roman wall, which is still visible, is flanked by some 35 to 40 bastions and measures 2,770 yards in length. The circumference of Pompeii is 3,930 yards and its area 170 acres, so that Volubilis had probably about two-thirds the importance of Pompeii, and its population, taking account of the usual density at the period, may have numbered from twelve to fifteen thousand in its palmy days.

The stones of Volubilis, which came from the quarries of Mount Zerhoun, about a mile to the east, are of limestone. The site of the town is a long ridge of the same formation between two ravines running north and south, which are usually dry. The western ravine outside the walls contains the remains of a suburb and also the exclusively pagan steles of a cemetery, which is later in date than the reign of Hadrian. The eastern ravine seems not to have been inhabited, though

* *A Compendyous Regyment or a Dyetary of Helth*. Compyled by Andrew Boorde. (London, Robert Wyer, N.D.)



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its western side is marked by a wall which appears to be a fortification of Punic origin, and at the eastern side one can distinguish the traces of a Roman camp. The circuit of the walls, which is pear-shaped, was pierced by eight gates, still in existence, and the enclosed area is divided into two by a wall of late date, running north and south. The rounded bastions which flank the walls are separated by distances of from 35 to 65 yards, and the strongly cemented walls are more than a metre in thickness. Their height was about $4\frac{1}{2}$ yards above their remains. The later wall, built of fragments of the older construction, was also one yard in thickness but its foundations were only two feet in depth, so that the roads of the first Roman period which cross it at right angles are 5 feet below its foundations. This account shows that Volubilis had at least three fortifications, corresponding to three periods, (1) the Punic period, followed by a pre-Roman period from Zama to the Emperor Claudius, (2) the true Roman period and (3) a late epoch, roughly between A.D. 300 and 780.

The town was supplied with water in two ways—in the Punic period by the stream Oued-Faraoun, and in the pre-Roman and Roman period by two distinct canalizations, capturing the streams of Mount Zerhoun at Fertassa. So far there has been no discovery of a circus, a theatre, or large baths, only of two small bathing establishments. The principal monument of Volubilis is the Basilica, parts of which belong to different periods, (1) a pre-Roman part of characteristic massive architecture, (2) a temple with porticos, dedicated to the family of Antoninus Pius and dated by an inscription of A.D. 138-180, (3) a temple, also dated by an inscription of A.D. 218, raised to the Capitoline Jupiter, Juno and Minerva. To the west of the Basilica is the Forum. Another important monument is the Triumphal Arch of Caracalla, erected in A.D. 217, and still partly standing in 1721, according to John Windus, the English traveller who saw and drew it.

As has already been mentioned, there have not yet been found at Volubilis a circus, a theatre, or large baths such as exist at Cherchell, and unless fresh discoveries are made, one must conclude that the Romanization of Cherchell was more complete than that of Volubilis, and that the latter town remained fundamentally more Carthaginian than the other, which was also founded by the Phoenicians, under the name of Iol. Arabian authors refer perhaps to the reputation of the Carthaginians for magic when they accuse Volubilis of being a city of magicians. According to the same writers, there were both Christians and Pagans at Volubilis, but, apart from a little bronze censer with a



IRON OBJECTS FOUND AT BATTLE, SUSSEX
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cross which M. de la Martinière claims to have found on the ramparts facing the Oued-Faraoun, there has been discovered no certain trace of Christianity. All the funerary steles are Phoenician or Roman, and bear pagan invocations or symbols. A fine mosaic found at the foot of the late wall already mentioned presents a number of Greek crosses drawn in white on a red or blue background, but this may be no more than a coincidence.

The history of Volubilis was, shortly, as follows. It was first of all a Punic or Punico-Berber town, like Tebessa in Algeria. The reigns of two Mauretanian kings, Juba II and his son Ptolemy, from B.C. 25 to A.D. 40, resulted in the Romanization of Volubilis. From A.D. 40, when Ptolemy was murdered by Caligula, to about A.D. 300 it was part of the Roman Empire, with the *jus civitatis minuto jure* which the Emperor Claudius accorded the town in 44 in its capacity of a *municipium*. Later, it obtained the *jus civitatis* from Caracalla, and probably the rights of a *colonia* with which it is credited in the Antonine Itinerary. From 300 to 788 Volubilis passed through a long obscure period, probably troubled by Donatists, Vandals, Berbers and Arabs. During this period it is mentioned only in the geography of 'Ravennas' (c. 636). According to Arab writers it was, in 788, neither abandoned nor converted to Islam. After 788 came the conversion to Islam of the Pagans, Christians and Jews of the region by Moulay Idris I, and the abandonment of Volubilis.

M. Salesses, who has copied more than two hundred of its numerous and beautiful Roman inscriptions and restored some of them, is now writing a handbook (in French) about Volubilis and an English edition of the same, for the numerous travellers who visit the ruined town every year. A guide-book of this kind is very much needed.

RELICS OF THE BATTLE OF HASTINGS

When ancient remains are found someone generally attributes them to a battle. We were once assured by a museum attendant that a case of Romano-British objects were relics of a battle which did actually occur on the spot—during the Civil War! The objects illustrated (see plate) have been claimed as genuine relics of the Norman Conquest, and if so, since the Battle of Hastings was one of the decisive battles of the world, they are of great historical interest. They were found in 1927 on the site of the battle, during drainage operations in Battle beneath the road between St. Mary's church and the church

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of St. Martin's abbey, opposite the se corner of St. Mary's churchyard. The road in question is an old one, quite possibly of prehistoric origin. Here it forms the main street of Battle, having the name 'Upper Lake' and 'Down Lake' where it passes the abbey—perhaps an echo of Senlac? This street exactly follows the divide or watershed between the basin of the river Brede and that of the small stream flowing out into the sea at St. Leonards.

Such a spot is of great strategic importance. The road is a ridgeway which led—in prehistoric times to Caburn and the chalk downs near Lewes; later from Hastings to London. Hastings itself is a prehistoric site. Flint implements have been found on the se slopes of the castle hill and on Fairlight Beacon, where the ridgeway ends. It may even have been occupied in Roman times; the castle itself stands inside an earthwork of rectangular form and the old name Hæstinga ceastre (1050) strongly suggests Roman activities. Further evidence is found in the alignment of the Roman road from Rochester and Maidstone southwards. This road can be traced through Staplehurst and Hemsted Park as far as Bodiam Castle, where it is lost. Throughout its course it aims directly at Hastings. Did William the Conqueror know of the existence of this road? Did he perhaps follow it, and its branch which goes off eastwards in Hemsted Park, on his march to Dover?

We wish to thank Mr Raper of Battle, the present owner of the relics, for some of the information quoted above, and Mr Arthur Beckett, Editor of the *Sussex County Magazine*, for the loan of the block of the plate, which was published in that journal in February 1928. It appeared also in the *Hastings Observer*, 22 October 1927.

MEDITERRANEAN ROCK-CUT TOMBS

The custom of burial in artificial caves was wide-spread in Mediterranean Lands during the Bronze Age. These are known to have existed in Southern France, Majorca, Sicily, Malta, Syria and Palestine. Too little attention has hitherto been paid to the plan, which throws light upon the religion of the makers. An admirable description of some Majorcan tombs (by Mr W. J. Hemp, F.S.A.) fully illustrated by photographs and plans, will be found in *Archæologia* (vol. lxxvi, 1927, pp. 121-60). The subject is far too vast to be dealt with in the form of a note, and we shall not attempt it. An article might well be devoted to it, and perhaps it may be possible later on to publish one. Although differing in details there



THE CROSS OF ST. JOHN, IONA
Pb. John Dunlop

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is a striking family resemblance between all these caves, suggesting some, perhaps remote, community of origin and religion. For the benefit of those who may wish to pursue the subject further we quote here some recent accounts :—Sicily ; P. Orsi : *Necropoli e stazioni sicule di transizione* (Bull. di Paletnologia Italiana xxviii, 1902 and xxix, 1903). Malta ; Annual Report of the Museum Department for 1926-7, p. iii (first discovery of 'neolithic' rock-cut tombs in Malta and Gozo). Syria ; tombs at Mishrifé, near Homs, excavated and described by Comte du Mesnil du Buisson in 'Syria', vol. viii, 1927, part 1 (published by P. Geuthner, 13 rue Jacob, Paris). Palestine ; a Bronze Age burial-cave near Neby Rubin, district of Jaffa, described in Bulletin no. 2 (1926) of the Palestine Museum, issued by the Department of Antiquities for Palestine. This tomb is assigned, by means of the pottery, to the middle Bronze Age of Palestine, the orthodox date of which is, approximately, 2000-1600 B.C.

THE CROSS OF ST. JOHN, IONA

The fragments of this cross have been fitted together and set up in front of the cathedral ; the work has been carried out under the supervision of Professor R.A.S. Macalister, whose account appears in the *Glasgow Herald* (22 September 1927). No attempt was made 'to present a deceptive counterfeit of the old work' ; and, as will be seen from the illustration, not much was really missing. Professor Macalister refers to the interest taken in the cross by the late J. Romilly Allen (see *Procs. Soc. Antiq. Scot.* xxvii, 1891-2, 256) and Macgregor Chalmers, as well as by Mr John Macdonald and Mr Ritchie, the latter being the official custodian of the remains in Iona. He continues :—

'The dimensions of the cross as restored are :—Height above top of base, 14 feet ; breadth across arms, 7 feet 1 inch ; diameter of ring, 4 feet ; breadth of shaft at base, 1 foot 7½ inches. St. Martin's cross, according to Sir Henry Dryden, measures 14 feet 3 inches, exclusive of the base on which it stands, and is only 3 feet 11 inches across the arms, the ring having a diameter of 3 feet 7 inches.

'In decoration the cross of St. John may be described as being of the "Kildalton" type, which is peculiar to the Western Islands of Scotland. St. Martin's and some others of the fragmentary crosses of Iona belong to the same group. Its characteristic is an exuberance of ornament as contrasted with figure-sculpture, and especially the presence of that curious device the "birds' nest" decoration, with

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associated figures of coiling serpents. Several of the panels on St. John's cross are variations of this theme. In two places on the western face the "birds' nests" are replaced by open hollow circular sockets. I suspect that these were originally filled with insets in polished marble'.

'Much of the head of the cross and the margins of the panels of the shaft are filled with interlacing work of almost painful minuteness. This is a feature that is especially characteristic of the Scottish sculptured stones, and that sharply differentiates them from those of Ireland. The explanation of the difference is simple. The art was imported from Ireland into Scotland, not boldly carved on heavy blocks of stone, but delicately traced on the pages of finely illuminated gospel-books. These were the models which were set for the imitation of the sculptors by the Irish missionaries, who brought the faith from Scotia Major to Scotia Minor; and the sculptors, it must be said of them, nobly faced and surmounted the enormous difficulties thus placed in their way'.

'As to the date of the cross, I should on Irish analogies have assigned it to the tenth century, but it may be a century later. Its date cannot be far removed from that of St. Martin's cross, which the inscription . . . declares to have been made by, or under the auspices of, a certain Gilla-Crist. I can find only two persons of this name recorded in connection with Iona, both abbots, the first from 1057 to 1062 (which are possible dates), the second from 1198 to 1202, which is far too late'.

'I have not yet mentioned what is perhaps the most peculiar feature of the cross—a detail, I believe, quite unique. I have said that the four quadrants of the ring were originally separate stones, secured by tenons into mortices cut in the sides of the cross-head. The cross-head was also a separate stone from the shaft, and was secured in like manner. This is common enough, and in fact is the most economical way of carving such a monument. But there was an additional deep mortice on the very summit of the cross, where no additional stone was to be expected. Hunting about, I discovered a fragment in the cathedral with a tenon upon it, which seemed as though intended for a mortice of about the same size, and on trial I found that it exactly fitted, that it supplemented the top ornament in an interesting manner, and that it added to the cross a unique cresting unlike anything I have ever seen or heard of in any monument of the kind. In this cresting is the only figure-sculpture on the cross. On the western face the Return of the Prodigal Son is represented; the eastern cresting is too

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broken for its subject to be identified. A peculiar fact about this cresting is that it is in a different stone from the rest of the monument ; it is in the micaceous schist in which some of the other crosses are carved while the rest of the monument is, I think, in whinstone '.

' In conclusion I may add that before fixing them together I had casts made of the fragments of the upper portions of the monument and these will be placed in St. Ronan's chapel. It will thus be still possible to study the minute decoration as closely as if the stones were still lying about on the ground and not raised to an inaccessible height of twelve to fourteen feet '.

We wish to thank Mr John Dunlop, of Glasgow Academy, for kindly allowing us to reproduce his splendid photograph, and Professor Macalister for the loan of the cutting from which the above account is taken.

NEW CAMP ON THE BERKSHIRE DOWNS

Mr Stuart Piggott writes :—

In the boundaries of land in Sparsholt, given in a charter of A.D. 963 (Birch 1121, Kemble 1247), mention is made of a certain ' Hremnes Byrig ' which has been identified by Dr Grundy (*Berks. Arch. Jour.* vol. xxxi, no. 1) as Ram's Hill, about one mile east of White Horse Hill. The whole hill, which lies within the 700-feet contour, is now under plough. I visited the site on 18 March, and found that traces of the entrenchments which the ancient name of ' Ravens' Camp ' would lead one to expect can be distinctly followed round the top. There is no trace of a ditch remaining, and the vallum is greatly spread—in the best preserved parts some 50 feet in overall measurement with a vertical height of about 3 feet. The entrenchments follow the lines of the hill and generally conform to the usual ' hill-top camp ' form.

There was no trace of any pottery or worked flints to be found within the camp area, but as I was leaving I picked up, on the east slope of the hill, a number of fragments of Roman pottery. Unfortunately I had very little time to search but I found about twenty pieces in five minutes. They mostly consist of coarse greyish wares including several of the ordinary cooking-pot rim types. One rim-fragment of a red-painted mortar is matched at Silchester (May, *Sil. Pot.* pl. LIV, no. 94) and is type 122 in the first Wroxeter report, where the form is assigned to late 3rd and early 4th centuries. I have found an exactly similar rim-fragment at the Cranhill farm villa (Letcombe) and the

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type occurs at Lowbury Hill (*Excavations*, fig. 16, no. 15). The fragments in general bear a distinct resemblance to those from Cranhill farm, while some are similar to pottery from Round Down, Harting.

In the Ashmolean Museum there is 'an enamelled bronze stud, 22 mm. in diameter and 2 mm. thick, with red enamel in between an interlaced design. Found by Mr R. Walker of Uffington "just over the hill SE of the horse on the margin of a ploughed field where it meets rising ground. This field is strewn with pottery"' (Letter from Mr E. T. Leeds, 1 July 1927). This site seems to fit in with the position of the Ram's Hill field.

THE FAYUM

In a letter to *The Times* (17 April, p. 12) Miss Caton-Thompson gives a resumé of her work in the Fayum desert.¹ Excavations on the Neolithic mounds and granaries have been continued, enabling a division of the 'Fayum industry' to be made, both on stratigraphical and typological grounds, into two distinct stages. No fewer than 115 straw-lined granaries have been found, though in bad condition.

A large gypsum granary and plaster-works of the early Old Kingdom have been discovered. The site is within 30 miles of the monuments and cemeteries of the Pyramid Age, and there is little doubt that it was an important source of supply for mortar and plaster. Some 2,500 unfinished gypsum (alabaster) vases, together with quantities of the flint tools—hollow crescentic grinders, pointed hand-picks, and end-scrappers—which fashioned them, were found. Close by is the workers' village of some 250 stone hut-circles, the first Egyptian examples which it is possible to date.

Work on lake-levels has been continued, with the result that the fourth dynasty shore-line has been fixed at about 145 feet above present lake.

The principal discovery of the season has been that of the irrigation works of Ptolemy Philadelphus (B.C. 285-247), and Miss Caton-Thompson gives some most interesting details of the circumstances which led to this. In past seasons she had noticed a faint line of double embankment running past a group of mounds of Ptolemaic houses, and later examination revealed a thin green haze of sprouting weeds, not only on the embankment but continued on from both its extremities in

¹ For Miss Caton-Thompson's account of her work in the seasons of 1924-5 and 1925-6 see *ANTIQUITY*, vol. I, p. 326.

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parallel lines over the desert. Along the margins longitudinal cracks could be seen at intervals. Trial sections showed sand-filled irrigation channels with feeders to the numerous desert depressions which occur some miles north of, and far above, the present lake. Gradually a whole network of channels, some 30 feet wide, were traced, these becoming more noticeable as the plant-life grew. Some 16 miles are already mapped, levelled and fixed, and 21 square miles of barren desert is shown to have been at one time cultivated land. A stone-lined reservoir 33 feet deep has been cleared. It was filled with drift-sand and the existence of former vine-yards was proved by the quantities of vine-branches in the sand. A rock-hewn cutting was found with a double flight of steps leading to a tunnel 6 feet wide by 6 feet high and 110 feet long, apparently an unfinished drain. The whole system was supplied from a main canal, which links up, ultimately, with the Nile. The period is dated conclusively, for a coin of Ptolemy Philadelphus was found at the quarry which supplied the stone for the reservoir, and six others of the same period were found in a house near an irrigation channel.

THE ORIENTAL INSTITUTE OF CHICAGO UNIVERSITY

A review of the work of the Oriental Institute of the University of Chicago has been issued by Professor J. H. Breasted, the Director. The Institute was organized in 1919 by funds provided by Mr Rockefeller, junior. Lately special attention has been given to Hittite sites. During the last two seasons an expedition to central Asia Minor has been organized under H. H. von der Osten and no fewer than 55 new and unmapped sites have been disclosed in a preliminary exploration within the great bend of the Halys river, some being of considerable extent.

One of the sites, near Alishar Hüyük, 128 miles from Angora, was systematically excavated in the Spring of 1927, and the pottery sequence and the material necessary for dating the successive levels in an ancient Hittite site have been established. One of the most important discoveries has been a series of Hittite bodies, which should enable the physical race of this people to be identified. The coming season will be devoted to the excavation of a citadel identified with the Hittite hieroglyphic people (as distinguished from Hittite cuneiform people).

The Palestine expedition of the Institute is engaged on the excavation of ancient Megiddo (Armageddon). Clearance of the site

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shows that human occupation goes back to the Stone Age. A bronze statue of the God Resheph as a Hittite warrior has been found, and part of an inscribed monument of victory recording the capture of Jerusalem by the Pharaoh Sheshonk (c. 947-925 B.C.)

An architectural branch of the Institute has been organized under the charge of Professor Uvo Hoelscher, and the palace of Rameses III (1198-1167 B.C.), connected with the Medinet Habu temple, has been excavated. An exhaustive report on this temple is to be published.

The Institute also directs its attention to prehistoric man and an expedition has been sent to north-east Africa and western Asia under the direction of Dr K. S. Sandford and Mr W. J. Arkell. Outside the Nile Valley palaeolithic implements were found in geological deposits on the Red Sea coast. This is the first discovery of stratigraphically dated human handiwork on this seaboard. The expedition has also made certain investigations in the northern Fayum.

Among other activities of the Institute is the compilation of a dictionary of cuneiform. The files already contain over 630,000 cards, about two-thirds of the known material. The work was begun by the late Professor D. D. Luckenbill, and is now under the editorship of Professor E. Chiera. (*The Times*, April 13, p. 10).

BRONZE STATUE IN CYPRUS

A well-preserved bronze head of heroic size has been found by a peasant at Kythraea, in Cyprus. There are also fragments of what appears to be the whole of the rest of a nude statue. The find was brought to the notice of the Governor, Sir Ronald Storrs, and photographs have been submitted to the British Museum. The opinion is that the head represents a Roman Emperor, probably Septimius Severus (died A.D. 211), in the character of a god. The statue is to be reassembled and the god whose character the Emperor assumed may then be determined. (*The Times*, 13 April, p. 14). We are indebted to *The Times* for permission to publish the illustration of the bronze.

THE GREAT CAULDRON OF FRENESHAM

The following note is quoted from Aubrey's *Natural History of Surrey*, iii (1718), 366 :—' In the Vestry [of Frensham church, in Surrey], on the North Side of the Chancel, is an extraordinary great Kettle or Caldron, which the Inhabitants say, by Tradition, was brought hither by the Fairies, Time out of Mind, from Borough-Hill, about a mile from



BRONZE HEAD FOUND AT KYTHIRAEA, CYPRUS
By permission of 'The Times'

facing p. 220

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hence. To this Place, if any one went to borrow a Yoke of Oxen, Money, etc., he might have it for a Year or longer, so he kept his Word to return it. There is a Cave, where some have fancied to hear Musick. On this Borough-Hill . . . is a great Stone lying along, of the Length about six Feet: They went to this Stone and knocked at it, and declared what they would borrow, and when they would repay; and a Voice would answer, when they should come, and that they should find what they desir'd to borrow at that Stone. This Caldron, with the Trivet, was borrow'd here after the Manner aforesaid, and not return'd according to promise; and though the Caldron was afterwards carried to the Stone, it could not be received, and ever since that Time no Borrowing there'.

I have seen this cauldron, which now stands in the tower of Frensham church on an iron tripod, hand forged. It is made of a single great sheet of copper, hand-hammered into shape; there are no seams, joints or cracks. The circumference, which is a perfect circle, measures 8 feet 8 inches; the greatest depth is 1 foot 2 inches. The rim is bound with an iron band, rivetted on to the copper. On each side is an iron handle joined to the iron band round the rim. The interior diameter from handle to handle is 2 feet 8 inches.

As to the origin of the cauldron, there are several folk-tales other than those given by Aubrey. One relates that it was dug up on Kettlebury Hill, south of Hankley Common, by the monks of Waverley abbey, and that it was taken by them to Frensham for brewing ale. Another tale says that it was a loan from the fairies of Thursley—there are tumuli in this parish, south of Ockley Common—and that Mother Ludlam, a medieval witch who lived, according to tradition, in Ludlam's cave in Moor Park, was the owner and lender. (This Ludlam's cave is close to Stella's cottage—the home of Dean Swift's idol). The cave was dug by a monk of Waverley abbey, who, when the water supply of the abbey failed, found that three springs joined here, and by enlarging their outlets and bringing them together he obtained a good supply of fresh drinking water; this he conveyed to the abbey through lead pipes for a distance of about half a mile.

The most plausible explanation of the origin of the cauldron is that it was made for the churchwardens of Frensham for the brewing of church-ales. Church-ales are said to go back to the Love Feasts of the primitive Christians; but in more recent times they were brewings by the churchwardens, during which all other brewing in the parish

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was forbidden, the profits being devoted to poor relief, and to the church fabric. The old saying that 'you are sure to find the best ale in the village near the church', probably arose from these ales being held at the 'church-house'. The parish books of Kingston upon Thames show that £7 15s (nearly one hundred pounds of our money) were taken at one of them in 1526. Sometimes a bride-ale was held in the church itself as a Welsh 'bidding'. The bride sold the ale, and each drinker gave what he pleased towards the setting up the young couple in housekeeping.'

I have explored the country round Frensham, but so far I have been unable to identify the 'Borough Hill' named by Aubrey, nor can I find the 'great stone'.
A. G. WADE.

HADRIAN'S WALL

In the *Durham University Journal* for March 1928, Mr F. G. Simpson summarizes the important results of work done under his direction on Hadrian's Wall in 1927. The situation before this work was as follows: it was known that the Wall, which is in general about 7 ft. 6 in. thick, stood in many places on a foundation, about 11 feet across, too broad for it. The surplus foundation projects on the south side of the Wall like a footpath. Where it occurs, the Wall is built to its full breadth (apart from small offsets) in the immediate neighbourhood of milecastles and turrets, for a few feet on each side of these buildings, and is then abruptly narrowed to the normal 7 ft. 6 in. The question had often been asked, why the Wall should in many places have been thickened in this way close to milecastles and turrets, and why it should in many places have been built on a foundation 3 feet broader than necessary. Lately it had been suggested, by Dr R. C. Shaw, that the broad foundation had originally carried an earthwork, with stone turrets and milecastles, and that the narrow Wall had replaced this earthwork. Further, in one part, on each side of Birdoswald, there was a turf Wall forming a loop line to the stone Wall, and it had been suggested (though the suggestion had been abandoned for several years) that this was the only surviving relic of Hadrian's original Wall, which on that view was a wall of turf. When, in 1911, it was settled that the stone Wall dated from the reign of Hadrian, the interval of time that separated the turf Wall from the stone Wall became a burning question, especially in view of the fact that the excavators of the nineties, who discovered the turf Wall, reported that they found black peaty matter, which appeared to represent a long



THE FRENHAM CAULDRON

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and slow accumulation, in its ditch where that underlay the stone Wall. This suggested an alarmingly early date for the turf Wall. One other problem calls for mention. The now universally-accepted theory of the Roman frontier is that the 'Vallum' is a non-defensive frontier-mark of Hadrianic date, constructed contemporaneously with the forts; and that the Wall, with its milecastles and turrets, was a subsequent but still Hadrianic addition. Now the original Vallum frontier could hardly have been patrolled without intermediate posts of some kind between the forts, which are sometimes as much as eight miles apart. It was an objection to the accepted theory, that no such posts had as yet been found.

On all these questions the work of 1927 shed new and in many ways conclusive light. First, the broad foundation was explained. It was found that the stone Wall, as originally planned, had been intended to be three feet thicker than its final normal width. In one place, near Heddou-on-the-Wall, Messrs. Simpson and Brewis found that it had been actually completed in stone at this breadth; and in the region near Gilsland Mr Simpson conclusively disproved the earthwork hypothesis and showed that the Wall had been partially but not wholly, built to the broad gauge when orders came to reduce it to the narrow gauge. At the turrets and milecastles, where the building had proceeded further than in the intermediate stretches, the Wall was left its full breadth; in between these points the broad work was demolished, though it is not certain that very much demolition was anywhere needed, and narrow work substituted. This change of plan during construction (a change of a type familiar enough, for instance, in ancient buildings in Rome itself) explains one whole group of outstanding problems.

Secondly, important new light was thrown on the turf Wall. A section was cut across its ditch where this underlies the fort of Birdoswald. It was found, sure enough, that the ditch contained black matter; but on careful inspection it was seen that this was not natural accumulation; but a filling of peat cut in blocks from a neighbouring bog and thrown in, higgledy-piggledy, with heather growing on them, when the ditch was still quite new. A careful expert study of the deposit at the very bottom of the ditch suggested that this artificial filling-up had been done in the same year in which the ditch was cut. All suspicion of a long interval between the turf Wall and the stone Wall, therefore, vanishes.

Another interesting fact about the turf Wall was discovered.

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Hitherto that structure had been known to extend for a mile and three-quarters, from Harrow's Scar on the east to Wall Bowers on the west. Evidence was found that it had extended for more than a mile west of Wall Bowers; for the next three turrets west of that point were examined and found to show anomalies only explicable on the hypothesis that they had been built not, like most turrets, in connexion with the stone Wall, but in connexion with the turf Wall, though this had been removed and the stone Wall built on its line. These anomalies were twofold: first, the turrets were isolated square buildings not bonded into the Wall; secondly, they stood close to the ditch, separated from it not by the customary twenty-foot berm of the stone Wall but by the six-foot berm of the turf Wall.

The suggestion thus irresistibly arises that the turf Wall was a temporary structure erected along the line prepared for the stone Wall; and it is interesting to note in this connexion that square isolated buildings, exactly like these newly-discovered turrets, exist at various places along the coast of north-west Cumberland, and are now conclusively explained as a chain of coastal signal-stations continuing the signal-system of the Wall along the Cumberland coast.

Finally, it was proved that a Roman building on Pike Hill, long known to exist, did not belong to the milecastle-and-turret system of the Wall, and therefore must be provisionally ascribed to the pre-Wall phase of the frontier, that is, to the Vallum system.

Such were the results of a season which, in spite of atrocious weather, proved by far the most important on the Wall since 1911, when the Hadrianic date of the stone Wall was demonstrated.

R. G. COLLINGWOOD.

THE ANTIQUITY OF IRON-WORKING

Among the archaeological surprises of the post-War period is the unexpected evidence of the early use of worked iron. Mr Woolley has discovered the remains of an iron instrument in the early cemetery of Ur (B.C. 3500), and I can now supplement this discovery from the records of Asia Minor.

At Kara Eyuk, the ancient Ganis, 18 kilometres north of Kaisariyeh in Cappadocia, cuneiform tablets have been found which show that it was a centre of Assyro-Babylonian trade and influence in the age of the Third Dynasty of Ur (B.C. 2300). At that time the metal mines of the Taurus were being actively worked by Babylonian firms, whose representative and agents, mostly Assyrian, lived at Ganis, where their

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offices had been established and their safes, in the shape of hut-urns of terra-cotta, were filled with business letters, receipts of money and goods, 'cheques' and the like. Roads existed north and south of the Halys, along which 'caravans' as well as the post passed, and constant intercourse was kept up, not only with the mining districts, but also with Syria, Assur and Babylon. Besides the individual traders, who do not seem to have been numerous, there were many *illāti* or 'Companies'.

In an article in the *Journal* of the Royal Asiatic Society (April 1928) I have shown that Burus-khatim, where the most important silver-mines were situated, was the modern Bereket-li in the Ala-dagh, where the chief silver-mines in Asia Minor still exist, extending over several square miles. Burus-khatim is called Bursakhanda in the story of the invasion of Cappadocia by Sargon of Akkad (B.C. 2700), and Burus-khanda in the Hittite texts. The latter is clearly the native form of the Assyro-Cappadocian name, Burus-khatim, 'Burus of silver', being an Assyro-Cappadocian play upon the native name with a reference to the Khati or 'Hittites', that is 'the Silver-men'.¹ The name would really be a derivative from Burus (in which I see the classical Borissos) with the two Hittite territorial suffixes *-khe*, 'people of', and *-anda*, 'place'. Equally clearly Bereket-li, with the Turkish territorial suffix *-li*, is Burus-khatim (possibly contaminated by the Western Asianic Berekyntos), while in the villages of Borasta and Farash on either side of Bereket-li the old name would also be preserved. At Farash there are ancient iron mines.²

The Hittite word *khat(i)*, 'silver', was borrowed by the Assyro-Cappadocians under the form of *khati(m)*. Phonetically it is identical with the Egyptian word for 'silver', *hez*, and thus bears witness to the early date at which a trade in silver—maritime rather than overland—must have existed between Egypt and Asia Minor. Many years ago Dr Gladstone pointed out that the Sixth Dynasty silver found by Sir W. Flinders Petrie at Abydos was of Asianic origin. Dr Alan Gardiner

¹ In BKU x, 31. 4-6, 32. no. 66, 'the Silver-man' (written *Kha-at-wa* in Proto-Hittite) is associated with 'the Dog-man' and said to shout 'Awaya!'

² In the annals of Telibinus 1, about B.C. 1700 (BKT. II, 1, 44) the name is written 'the mountain of Bursukhandas', and associated with Barminiyas or Barwiniyas. In the chronicle of the invasion of Cappadocia by Sargon of Akkad also 'Bursakhanda' is described as situated on a mountain (the Ala-dagh). Ala-dagh in Turkish signifies 'horse' like the Arabic Farash (*faras*, 'mare'), Hebrew, *pharash*. The Semitic word was borrowed from the Hittite *paras* 'horse' (from which Barwiniyas or Parwiniyas may be a derivative).

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informs me that the Egyptian word already occurs in the age of the Fourth Dynasty.

Just before the War the peasants unearched between one and two thousand tablets at Kara Eyuk in a field near the village and not far from the *tel* known as Kul-tepè. These have been scattered in various directions; a large number now in the British Museum have been published by Mr Sidney Smith, and last year 233 of them, obtained by Professor Breasted at Cairo and copied by the late Professor Clay, were published by the University of Yale.³ Two of these enable me to throw new and unexpected light on the history of the iron industry.

One of them (no. 92) reads: (1) 'Lakibum writes as follows: (2) Askutum and Kurub-Istar (3) to Ana-nada (4) say: 2 talents, 10 manehs (5) of lead with your seal (6) and 4 shirts (*kutani*)⁴ (7) Ana-Samsi (8) has brought. The lead (9) we have packed, and (10) 2½ manehs of raw metal (*imti*), (11) 1 maneh, 6 shekels (12) of pure metal (*barzi*) to the house of the *garum* (13) we have paid. (14) The rest of the lead, (15) 2 talents, 6½ manehs, 4 shekels (16) of lead we have reserved, and the silver (i.e. payment) (17) we send you (*-tum* miswritten or miscopied for *-qu*). (19) In accordance with your order (20) Ana-Samsi has brought down the whole to you'.

The second document (no. 50) runs as follows: (1) 'To Uzua, Mazâ, Sume-abia, (2) Asir-malik, Amur-Asir, (3) Su-Anum, Asir-imeti and (4) Amur-Istar writes as follows (5) El-meti: 4½ shekels of iron (*parzi-ili*) of the best quality, (6) complete, with my seal, Amur-Asur, Su-Anum (7) Asur-imeti and Amur-Istar (8) have taken to you. My brother [has said]: (9) give us this iron at its (10) value, half a maneh (11) of silver with the seal of Iti-abem, (12) which Amur-Asur on behalf of Nisini (13) has taken, and for us with (14) the price of the iron, viz. half a maneh of silver, (15) seal it and to Amur-Asur (16) give it, and on behalf of Nisini (17) let him bring it'. The rest of the letter is occupied with the despatch of *beriganu* or 'breeches', a word by the way which casts light on the origin of the Keltic *braccae*.

The second document reveals to us for the first time the origin of the Semitic word for 'iron', *barzel* in Hebrew (Chaldee *parzel*), *parzillu* or *barzillu* in Assyrian. In the tablet it is written ideographically KÙ-AN, 'metal of the god' or 'metal of heaven', the Sumerian AN having both significations, the first signification being represented in Semitic by *barzi-ili*, while the second appears in Egyptian as *ba-n-pe(t)*,

³ *Letters and Transactions from Cappadocia*, by Albert Clay. New Haven, 1927.

⁴ Hence Greek χιτών (originally a Karian word according to Herodotus, v, 88) and Hebrew *kuthoneh*.

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'metal of heaven'. Like the name of 'silver' it would thus seem that the Egyptians derived their name for 'iron', and therefore the metal itself, from Asia Minor, and it is significant that at Farash, on the eastern side of the Bereketli mines and on the old high-road from Kaisariyeh to Syria and Cilicia, there are ancient iron mines. The name indicates that the first iron to be worked was meteoric, and accordingly a Hittite text informs us that while gold came from Birununda and copper from Mount Taggasta in Alasiya, iron 'came from heaven'. At Ephesus the great mother-goddess of Asia Minor was symbolized by a meteoric stone (which with its binding of woollen threads denotes 'deity' in the Moscho-Hittite hieroglyphs). The Hittite texts further distinguish iron from 'black iron', but as 'iron-stone' is also mentioned, it is possible that haematite may be meant. Sir William Ramsay tells me that the ground at Yalowaj (Pisidian Antioch) is covered with fragments of haematite.

In my article in the *JRAS* already referred to I have noted that iron-working is described in an early Hittite text which Dr Forrer would date before B.C. 1900. We learn from the text that an iron-foundry already existed at Buruskhanda where an 'iron chair with an iron footstool', called a *khankutim*, had been made for the Hittite king. At a later period (14th century B.C.) the king of Kizzuwadna (Cilician Komana) writes that none of 'the best iron' was left in the store-house at Kizzuwadna, but that as soon as it could be obtained 'the chief smith who works the best iron' will soon finish the dagger-blade needed by the king's correspondent, who was probably the Egyptian Pharaoh. The 'chief-smith', by the way, is given the Sumerian title of *tibira* or 'smith', which was naturalized in Asia Minor as we learn from the name of the Tibareni, the Tabal of the Assyrians and Tubal of the Hebrews. The antediluvian city of Bad-Tibira, 'the fortress of the Smith', in Babylonia becomes Panti-bibla in the Greek of Berossos. In the Old Testament we find Tubal-Cain by the side of Cain, 'the Smith', who gave his name to the Kenites or wandering 'Tinkers', and it is possible that Kenite and Tubal-(Tabal) were eventually differentiated, Kenite signifying 'copper-smith' while Tubal (-Cain) was 'iron-smith'.

However this may be, the discovery of the etymology of the word *barzel*, *parzel*, 'iron', clears up the name and character of the mysterious 'Perizzites' of the Old Testament. They were the 'metal workers', more especially the workers in iron, who are named along with the Kenites, Hittites, Amorites, Hivites or Akhaeans (Hittite Akhkhiyawa) and other inhabitants of pre-Israelitish Canaan.

A. H. SAYCE.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

Sir George Macdonald's 'Rhind Lectures', delivered in Edinburgh during March, dealt with Roman Britain. The treatment is historical, and northern Britain naturally receives a good deal of attention. The history of Roman Scotland has been reconstructed almost entirely by means of excavation, and Sir George has himself written most of it. The publication of his lectures in book form will be eagerly awaited. (*Scotsman*, and *Glasgow Herald*, 20-24 March).



A proposal to establish a museum at Basingstoke has been put forward by Mr G. W. Willis, a former mayor of that town. The country round is rich in remains, especially worked flints, as the presence of more than one private collection, including that formed by Mr Willis, indicates. It is to be hoped that the project will be strongly supported by residents in the district.



An enclosure of dry-stone walls called 'The Castles', in county Durham, has recently been visited by Professor Petch of Manchester University. It is very puzzling. The corners are sharp, not rounded as are the corners of Roman forts. In the wall, on each side of the entrance, is a 'guard-chamber'. The remains are well preserved and deserve fuller investigation.



The boy who found the gold coins in a hollow flint at Chute (*see* *ANTIQUITY*, II, 89) has received more than £50 for them from the

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Treasury. Thus is virtue rewarded! When such finds are duly reported to the police by the finder the Lords of the Treasury pay him 80 per cent. of the archaeological value of such as they keep and return the rest to him. In this instance they kept (for the British Museum) sixty-five of the ninety-three coins, the rest being bought by Captain B. H. Cunnington for the Devizes museum and for disposal to other museums and collectors. (*Wiltshire Gazette*, 9 February).



The excavations at Kingsdown Camp, near Mells, Somerset, have revealed remains of two periods—Roman and earlier. The rampart stands between an outer V-shaped (Roman) and an earlier flat-bottomed ditch. The Roman objects included a coin of Domitian (struck 86 A.D.), an iron dagger, fragments of Samian pottery, and several bronze brooches, 'all apparently of the early Roman period'. The site will be visited by the Somerset Archaeological Society, which meets at Bath in July. (*The Times*, 23 February, p. 17; 30 April, p. 11; 15 May, p. 14).



A basalt column containing a military inscription of Thothmes III (1501-1447 B.C.) has been found at Tabgha, north of the lake of Genesareth. (*Pester Lloyd*, Budapest, 11 February).



A French expedition is exploring Ahaggar, the mountainous region of the central Sahara, between Air and Fort Flatters. Dr Leblanc is the anthropologist of the party. (*La Dépêche*, Toulouse, 22 February).



The finds at Dendra, at the foot of the Mycenaean citadel of Midea in Argolis, are described by Mr A. J. B. Wace, writing on behalf of Professor Persson of the Swedish Expedition in Greece, in *The Times* (27 February, p. 17). Thirty-three objects of bronze were found in a rock-cut tomb.

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A pile-dwelling has been found in the Plinlimmon district of Wales, at an altitude of 1500 feet. It is to be excavated. (*Western Mail*, 3 March).



The site of Dougga (earlier Thukka), in Tunisia, is to be excavated this year under the direction of M. Poinssot, the Director of Antiquities. An interesting account of the town and its temples is printed in *The Times*, 14 May, p. 17.



A pre-Roman cemetery with rich grave-goods has been found at Caivano in Campania. It is to be excavated by the Department of Antiquities. (*The Times*, 26 March, p. 15).



Reproductions of some barbarous sculptures in Cyrenaica are published in the *Illustrated London News* for 10 December 1927. They seem to be of Graeco-Roman age.



An urn of the collared type found in a cist at Slapton in South Devon has been described and illustrated by Mr H. G. Dowie. (*Trans. Torquay N.H. Society* (1926-7), v, part 1).



The Kent Archaeological Society proposes to start an excavation fund for exploring the ancient sites in the county. Kent is one of the most 'historical' regions in England, and we wish the venture every success. The secretary of the organizing committee is Mr F. C. Elliston Erwood, Jesmond Dene, Foxcroft Road, Shooters Hill, S.E.18.



A book on British river-names by Professor Ekwall is announced by the Oxford University Press. Such a work has long been needed, and the one promised will certainly become the standard authority on the subject.

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The excavations at St. Catherine's Hill, Winchester, will be renewed during August. Work will be concentrated on the prehistoric (Iron Age) camp, the entrance to which revealed so many interesting features last year. A full account of the whole work will eventually be published by the Hampshire Field Club. An appeal for subscriptions has been issued (hon. treasurer, Mr S. R. Hamby, 9 College Street, Winchester). The work is important but incomplete and deserves the fullest support ; it is in good hands.

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The Cambridge Museum of Archaeology has been enriched by the addition of the late Sir William Ridgeway's collection, which contained amongst other things many specimens of primitive currency ; a number of objects from South Africa obtained by Mr M. C. Burkitt during a recent visit there ; objects from Eskimo sites in East Greenland obtained by the Cambridge University Expedition ; and several specimens of local interest, including two beakers from near Ely and beaker-fragments dredged from the river Wissey, near Stoke Ferry, Norfolk. (*Annual report of the Faculty Board of Archaeology and Anthropology* [Cambridge]), 14 February 1928.

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To the series of period-maps published by the Ordnance Survey is about to be added a map of England and Wales during the 17th century. It will show the principal towns (based on Speed's Atlas), ports classified according to their importance, some economic features, and the principal Civil War sites. All the roads given in Ogilby's traverses (1672) will be marked. The basis is the new Ordnance Survey physical map. A new and greatly enlarged edition of the map of Roman Britain is also announced, as well as a second edition (slightly enlarged and brought up to date) of *Air Survey and Archaeology*.

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The second interim report on the excavations at Caer Hun (Kanovium) near Conway, in North Wales, is published in *Archaeologia Cambrensis* (December 1927, pp. 292-332), with a plan.

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Dr Roy Chapman Andrews, after much delay, has organized a further expedition to Mongolia to find traces of primitive man. He left Kalgan early in April. (*The Times*, 17 April, p. 15).

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Mr Cecil M. Firth, of the Egyptian Department of Antiquities, is continuing his work at Sakkara, and has completed his investigation of the extraordinary structure of red granite at the bottom of a pit in the southern temenos wall of the Step Pyramid, and which is thought to be a funeral chamber. The chamber contained only stone chips and débris. Though there is no evidence that it ever contained anything, the excavation has revealed a tomb of exceptional interest. Excavation of other parts of the Pyramid enclosure is being pursued and has already led to interesting discoveries which are reported in *The Times* (17 April, p. 15 ; 24 April, p. 15).



Dr. S. Langdon, Joint Director with M. F. Watelin of the Oxford-Field Museum Expedition at Kish reports on the work of the sixth season, which closed on 15 April. The Expedition has concentrated on the ancient mound north-west of the great stage tower of Hursagkamma, or ancient eastern Kish, built entirely of plano-convex bricks, the only known stage tower of its kind. The date of construction is before 3000 B.C. At a depth of 25 feet below the ruins of the temple of the Sargonid period (c. 2700 B.C.) a sterile stratum seven feet thick was met, with a continuous red earth stratum five feet thick which extends over the entire mound, and represents the Sumerian temenos platform on which the stage tower and three great temples of Kish were built about 3000 B.C. Most important evidence for dating the evolution of ancient civilization was found. Temple records and seals definitely date this red layer as before 2900 B.C. A mat burial of a woman, with solid gold fillet about her head and many ornaments, and a lapis lazuli seal, were discovered. A series of brick-vaulted tombs of small plano-convex bricks was found below the level of the stage tower. In two of the tombs were chariots, with the bodies of the oxen which drew them, and also those of attendants and servants.

The Expedition also completed work at Jemdet Nasr begun by Dr Langdon in 1925-6. Painted pottery of thick polychrome geometrical type and tablets in early pictographic script were found.

(*The Times*, 17 May, p. 12)

Reviews

THE NILE AND EGYPTIAN CIVILIZATION. By ALEXANDER MORET. Kegan Paul. 1927. pp. 478, and 24 plates. 25s.

The value of this work consists in the outline of the social and political history, as derived from tradition and documents. For dealing with such a subject Professor Moret is well qualified, as he has translated and published some of the documents, and is well acquainted with the literary evidence, especially ceremonial and religion. For this side of the subject therefore this volume may well serve for agreeable general reading, and for reference, although it repudiates the literary evidence of the chronology. But unfortunately the literary mind does not readily grasp archaeological facts, and the account ignores the three long civilizations of the prehistoric ages, which probably cover as much time as the historic period. The vague gleanings about early times that may be derived from written material is left entirely in air, without any connexion with the course of development now so fully known in detail, and as familiar to us as the condition of the historic ages. Even when coming to the First and Second dynasties only very incomplete accounts by French writers are referred to, in less than a page, while the full record of each royal tomb and its contents and inscription, published in England, seems unknown to the author. When reaching the Third dynasty the most important discoveries of early architecture at Saqqarah in recent years, illustrated in popular papers, are entirely unnoticed. The work therefore needs another of equal size in order to fulfil its professed title, especially as it says nothing of the physical conditions of the Nile which rule Egyptian history, and head the title.

Some details also need revision. The cattle register held every two years is referred to as a census of 'fields and moveables assessed in gold'; it is hard to see any trace of such a reading of the plain cattle census in the early Annals. The earliest cartouche is before Snefru, and the fantastic idea of its representing the course of the Sun is entirely baseless; it was the form of the collar of the high priest of Ra, and refers to the priestly origin of the kingship. Later on, the whole history of the ninth and tenth dynasties is ignored, both the monumental lists of the kings, and the actual remains, showing the Syrian origin of the rulers. On coming to the great discoveries of the royal mummies they are ascribed to the French Directors, but both of them were found by native plunderers from whom the secret was bought. Akhenaten and his astonishing scientific worship of nature, are but little noticed, nor is the probability of his lovely queen heading the Counter Reformation even hinted. The fable about walls being built of mud, *pisé*, is seriously stated, while no such wall has ever been found in Egypt, regularly laid bricks being universal. Various other details might also be mentioned needing revision.

The duty of a translator ought to extend to quoting the literature of the fresh language. On the contrary English works are almost ignored, and only French books are named which are seldom in English libraries. This ignoring of discoveries and works other than French was seen in another volume of this series, *Race and History*, where

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Professor Pittard only quoted what little was guessed about Egyptian anthropology forty years ago, and knew nothing of the thousands of dated skulls of all periods and their complete publication by Professor Pearson's department. Such volumes have no business in an English dress when they are entirely ignorant of English work.

The whole question of the linking of traditional history with material civilization in each country is urgent at present. The linguist does not comprehend archaeology, and the archaeologist is repelled by the vagueness of accounts over the origin of which philologists wrangle. For Egypt we need the traditions and early religion joined with the very definite archaeology, which varied in every generation during thousands of years. In Greece the early myths and tribal histories need consolidating on the tangible remains. In Palestine the early Biblical history should be understood in the light of the well-dated town sites now uncovered. In Britain the civilizations that have been traced should stabilize the early traditions of migration, and be interpreted by the written history in Welsh, which is at least more satisfactory than the records of the Irish and Picts which go back to the first and second century. The passion for denial which reigned from Niebuhr to Cheyne has had a salutary check in many countries, and we must rather take all the material facts discovered as a skeleton, and see how that is to be clothed in the fabric of traditions, sometimes tattered, and sometimes gorgeous with national vanity.

FLINDERS PETRIE.

THE DRUIDS. By T. D. KENDRICK, M.A. Methuen & Co. 1927. pp. 222, and 51 illustrations. 12s. 6d.

This is, as it claims to be, a 'complete and well documented summary of the whole of the pertinent material upon which a study of this subject should properly be based'; but the material is scanty, and our knowledge of the druids must necessarily remain meagre and nebulous.

The author first treats with the tradition of the druids, and shows that the Saxons blotted out all memory of them, neither Bede nor any of the chroniclers having mentioned them; that there are no ancient place names which suggest that any megalithic monument was built either for or by them, and that there is no direct link between the druids of ancient times and the modern disciples of neo-druidism, 'with all its extravagances and impostures'. 'A knowledge of the former existence of the priesthood was regained slowly and laboriously in the 16th century as a result of the return to the study of the ancient historians. And it has shown that the theory, now so popular, that the druids built the megalithic monuments, was an invention of the late 17th century, successfully promulgated in the succeeding century by Romanticism'. As regards Stonehenge, until Aubrey (1626-1697) made his tentative suggestion that it was built by the druids, no author and no folk-lore had associated the structure with them.

The most interesting chapter in the book is the one on Prehistory, perhaps because it is a digression, but a necessary one, in which, like a detective with slender clues who works round the periphery of the case and having fixed his suspicions on one or two possible culprits gradually narrows down his sphere of action, Mr Kendrick begins with a description of the condition in Gaul during the Bronze Age with its division into three cultural areas, and discusses the influences from without which caused the dissemination of the cultures of the Iron Age. He disbelieves in a 'leaf-shaped sword' invasion, and states as his opinion that the Urnfield folk from south-east Germany absorbed a Hallstatt culture and, by means of 'culture-creep', and not by a movement of

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peoples, modified the Bronze Age culture of Gaul about 1000 B.C. The 'frill-comb-smear' pottery folk from the north of Germany spread westwards and reached the Thames valley, Kent and Sussex about 600 B.C. The later La Tène civilization was a natural development from the Hallstatt, and was propagated by a great movement of peoples during the 5th, 4th and 3rd centuries B.C.

Resuming his main thesis he shows that Britain was the fountain head of druidism and that the druids were famous in Gaul as early as the 2nd century B.C., and flourished in Anglesey as late as the first century of our era. This is the only definite information we have. The Belgae can be excluded from the possible originators of the cult since they came from Germany, and we know on the testimony of Caesar that there were no druids in that country. The Ligurians can also be excluded, because they were essentially an agricultural and peaceful people, and druidism was intimately connected with militarism. The Aquitani too, can be excluded because there is no record of druidism in Spain or Portugal. Conjecture falls on the Kelts, who originated in the south German plain and enjoyed the culture of La Tène. The Phoenicians did not touch Gaul, but about 600 B.C. Greeks founded colonies in the neighbourhood of Marseilles and soon exerted an influence on the culture of Gaul.

If the druids were Keltic, did they exist side by side with a Keltic religion, or were they the only representatives of religion? And in any case what were their functions? These are questions which Mr Kendrick strives to answer, but with one exception all the references to the druids in classical literature were written after the Roman occupation of Gaul, and most of them at second hand. The confusion among the writers as to the actual functions of the druids makes their evidence somewhat untrustworthy. This much however can be assumed—that the druids believed in the immortality and reincarnation of the soul, and that they practised human sacrifice; but there is no evidence that they were possessed of remarkable learning.

When Mr Kendrick speaks of Stonehenge, a visible structure which has been partially excavated, as opposed to classical references which may, or may not, have been distorted by the many mouths through which they passed before being perpetuated in writing, his arguments run the risk of being refuted by evidence revealed by the spade, the only sure weapon in scientific controversy. As for the purpose of Stonehenge, all is conjecture; and other things being equal, one guess is as good as another, but some of Mr Kendrick's assertions can be negated by the results of excavation. He implies that the Aubrey holes were made to contain the bluestones from Prescelly soon after the erection of the original sarsen circle at the beginning of the Bronze Age. There is no evidence however that those stones ever stood in the holes. He goes on to state his opinion that the restored structure, as we see it today, was built 'as a rallying-point . . . for druidism . . . in the first century B.C.' But one of the few certain dates, if not the only one, in connexion with the construction of Stonehenge is that the tooling of the stones took place during the early half of the Bronze Age. As confirmation of this we have the record of the finding of fresh humanly struck flakes of both sarsen and bluestones associated with a primary Bronze Age interment in barrow 16, just west of Stonehenge. In this cist were also a bronze knife-dagger and a bronze pin (Hoare, *Ancient Wilts*, i, 127). Again the fact that beaker fragments are not found in the silting of the ditch at a lower level than that of the layer of 'masons' chips' is evidence that the reconstruction of the monument happened at a time when beakers were still in everyday use. Mr Kendrick states that there is no evidence that the druids were connected in any way with either megalithic tombs or stone circles; but, after all,

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Stonehenge is a stone circle, albeit an elaborate one, in the same way that Westminster abbey is just as much a church as the modest place of worship in any village.

The author comes to the conclusion that druidism was Keltic in origin, 'for the reason that the Gauls in one of the proudest moments of their history would never have tolerated the imposition of a foreign priestly caste able thoroughly to dominate both their civil and religious life'.

This book is not easy to read, and some of the arguments are at first not easily followed, but the subject is a difficult one, for the data are few and must needs be purged of the romance that encumbers them. It is in all probability the last word on druidism, for it is unlikely that any further information on the subject will come to light, but, as the author confesses, he has been able to offer nothing better than what he knows to be surmise. It is by far the best book that has been written on the subject.

R. C. C. CLAY

THE PLACE-NAMES OF WORCESTERSHIRE. By A. MAWER and F. M. STENTON in collaboration with F. T. S. HOUGHTON. English Place-Name Society, vol. 4. Cambridge University Press, 1927. 20s.

The first thing that strikes one about the Place-Name Society's new volume is its size, viz. 420 pp., as compared with 316 last year (Beds. and Hunts.) and 274 in the initial county volume (Bucks). No member of the Society is likely to complain at getting so much for his money, but this arithmetical progression can hardly go on indefinitely. The arrangement of the volume is, like that of its predecessor, by Hundreds, and it includes valuable addenda and corrigenda to those already published.

Of especial interest in this county are the old 'salt-ways', for 'Droitwich and its neighbourhood were the only places in central England where salt was produced in the Middle Ages'. Some of the 'salt-ways' are still known by that name and no fewer than fourteen are here traced, their former courses being indicated by sporadic Saltway barns, Saltway farms, Salters hills, etc. For the river-names the earliest records are given, but 'their interpretation is reserved for the present, as they can only satisfactorily be dealt with as a whole'. This seems to promise us a volume on river-names, to be produced when more material from the whole country has been collected and analyzed.

The county of Worcestershire was considerably modified, both by addition and subtraction, in the course of the 19th century. Our authors have adopted the inclusive method, lost Worcestershire for the historical student and new Worcestershire for the general public. At the outset they are baffled by the name Worcester itself. Camden derived it from Wyre Forest, a theory which Professor Ekwall is inclined to approve. The prevailing Wigorn-, till lately the signature of the bishop, may be cognate with a Gaulish stream-name Vigora, and Wyre may be for an earlier Wigra (a stream-name transferred to a forest?). This is, of course, all purely conjectural. Cotswold, which looks difficult, is here confidently assigned to a personal name Codd, perhaps identical with the Cut of Cutsean, in the heart of the Cotswolds, where there is also record of a Codeswelle. The name seems to have spread from a comparatively small area to the whole region originally known as the 'hill of the Hwicce', the last being a folk-name of mysterious origin and history. All the place-name evidence points to a late settlement

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of the region followed at no great interval by conversion to Christianity. There are only two names connected with heathen worship, viz. Arrowfield, from O.E. *hearg*, heathen temple, whence also Harrow, Middlesex, and Weoley, from O.E. *wēoh*, idol, which appears also in Weedon, Bucks. The archaic type in *-ingar* is altogether absent, while *-ingtun* is strongly represented. The evidence as to the relative importance of West Saxon and Anglian settlements is, on the whole, vague and inconclusive.

An important by-product of the place-name survey will be such an immense addition to our knowledge of Old English personal names as will make possible the compilation of a great Onomasticon. Most of the newly discovered names revealed by the analysis of the place-names in which they occur are of the uncompound type. In this reviewer's opinion, such names, unless clearly nicknames, are always shortenings from the normal dithematic type. Worcestershire place-names not only show a number of those shortened forms with the derivative suffixes *-il(a)*, *el(a)*, *-uc*, *-ic*, but also with the less recognized suffixes *-t*, *-n* and *-r*.

Some 1500 Worcestershire place-names are dealt with. A few of these are left quite unsolved. It might be worth while, in future volumes, to call particular attention to a short list of the most important insoluble problems. Hundreds of other names are mentioned in connexion with those of Worcestershire, and there is much information on the distribution of the name-elements and on field-names and other minor names. Altogether we have here a volume of which the Society may be proud.

A few queries occur to the reader. I will be satisfied with one. On p. 16 it is suggested that the family name Trapnell, c. 1210 Tropinel, is a diminutive of a variant of Turpin. Langlois (*Tableau des Noms Propres compris dans les Chansons de Geste*) does not record the variant Trop-in, and Tropinel, fairly common in M.E., was earlier Tropisnel, an O.F. name, 'too rash' (cf. mod. Troplong, Trodoux, or Eng. Toogood). The *-s-* would disappear as in O.F. Isnard, O.N.G. *ian-hard*, which is given (p. 157) as the first element of Innerstone, formerly Inardeston(e).
E. WEEKLEY.

INTERIM REPORT UPON SUCH OF THE STONE CIRCLES OF
ABERDEENSHIRE AND KINCARDINESHIRE AS HAVE BEEN
SCHEDULED AS ANCIENT MONUMENTS. Compiled from the Morven
Records. By ALEXANDER KEILLER. Privately printed. 1927.

This pamphlet consists of brief descriptions with full tabulated information of some of the stone circles of the district. We gather from the contents that its purpose is to draw attention quietly, but effectively, to the present condition of the remains. Every one of them is scheduled under the Act, as an Ancient Monument, but, to judge from the information here given, this scheduling does not achieve the object in view. We gather that in the majority of cases, as might be expected, there is not only goodwill, but enthusiasm, on the part of the owner or tenant, but the machinery by which the Act is worked appears to need overhauling. In many cases, it is stated, the tenant was not aware that a monument on his land had been scheduled. No doubt a good deal of the neglect is due to lack of funds, but we do not think that this is a complete answer. It must always be difficult for those responsible to allocate fairly the funds available between different classes of monuments in their charge, but it is clear that little or nothing has been spent upon the preservation of the Scottish stone circles. In the opinion of the reviewer, preservation should always have precedence over exploration.

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ASIA, EUROPE AND THE AEGEAN AND THEIR EARLIEST INTER-RELATIONS: *Studies in Early Pottery of the Near East II.* By H. FRANKFORT. London, Royal Anthropological Institute (Occasional Papers no. 8). 1927. pp. xii, 204, and 13 plates. 12s. 6d.

This, the second part of Dr Frankfort's studies in the early pottery of the Near East is practically confined to the Aegean area and it will prove fascinating to all who have worked in that field even if they cannot agree with him. Some of his beliefs seem too confident and some of his deductions hardly justified by the evidence. For instance the statement that in the Second Thessalian period the settlements are fortified rests only on the evidence of Dimeni. Are the sauceboat, the beaked jug, and the spiral each derived from one single source? The spiral occurs in New Zealand and he rightly points out likenesses between Pueblo pottery and Thessalian. Yet he seems occasionally to forget the caution he wisely employs in dealing with the Anau pottery or Dr Anderson's finds in China, though he speaks of Professor H. Schmidt's claim in this connexion as a 'methodological fallacy'. In dealing with the Neolithic period on the mainland he omits Dr Blegen's discoveries at Nemea, the Argive Heraeum, and in Arcadia. Indeed in his enthusiasm to demonstrate his points he almost forgets to take into account other gaps in the evidence or how little exploration has been done in certain districts. He says (p. 136) that in the Middle Aegean period the Cyclades were deserted or cultural blanks except for Melos. This rests only on negative evidence and some of the most fertile islands have not yet been properly examined for prehistoric sites, though such are said to exist. He neglects the report of the last excavations at Mycenae, particularly as regards the Early and Middle Helladic evidence and makes no use of an important class of M.H. pottery, the buff and brown polished wares. The suggestion that the TIB ware in Thessaly belongs to the first and the other 1st wares to the second period has not yet been confirmed by fresh excavation. He has misunderstood the synchronisms with the Minoan series for E.H. and E.C. wares suggested (B.S.A. xxii, p. 186) by Dr Blegen and the present writer into an attempt to divide the E.C. and E.H. periods into three subdivisions. In the paper to which he refers no mention is made for instance of E.H. I, II, or III, though they are used in the British Museum catalogue.

It is, however, ungrateful to turn over the author's pages merely for the sake of picking holes in argument or of noting omissions of evidence. Perhaps the Anatolian evidence is too much stressed, since no scientific excavation of a prehistoric site in western Asia Minor—Troy excepted—has yet taken place. We wonder too how great really is the Danubian influence in Neolithic and Bronze Age times on the Greek mainland and whether the author is justified in his bold crossing of the sea to Apulia. After all if the mainland of Greece were invaded from the north by Danubians, from the east by Cycladic folk, and later still from the south by Cretans who as some claim displaced the population in wholesale fashion, we might absurdly conclude there were never any true mainlanders. As it is Dr Frankfort's interesting and stimulating study should encourage the careful collection and collation of evidence, for conclusions should be based only on the fullest corpus of evidence especially where it is ceramic, and should emphasize the urgent need for really scientific excavation particularly on prehistoric sites.

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THE MUSEUM JOURNAL, vol. xviii. No. 3 (September 1927); published quarterly by the Museum of the University of Pennsylvania (Philadelphia, Pa).

PALESTINE MUSEUM BULLETINS, nos. 2 and 3; issued by the Department of Antiquities for Palestine, 1926.

ANNUAL REPORTS OF THE MUSEUM DEPARTMENT, MALTA, 1921-7.

COLCHESTER AND ESSEX MUSEUM. Annual Report for 1927. 6d.

Some of the best and most valuable archaeological material lies buried—so far as the general public is concerned—in museum reports. To some extent that is inevitable, and much of the contents concerns specialists only; yet we fancy that even specialists may not all be familiar with the publications quoted above.

Pride of place must be given to the first-named report, which contains two admirable illustrated articles—one on Sumerian sculptures by L. Legrain, the other on Eskimo Pictorial Art by J. Alden Mason. Mr Legrain formerly represented his museum on the Joint Expedition at Ur, and he is well known to students for his splendid publications on Sumerian antiquities (see review by Professor Sayce in *ANTIQUITY*, 1, 502-3). The sculptures illustrated are all of interest and several of them are very fine.

The Palestine Museum bulletins contain short illustrated accounts of important finds—a deposit of the middle Bronze Age at Rubin (Jaffa district) in no. 2, and selected types of Bronze Age pottery (occupying the whole of no. 3). The latter will be invaluable to students. It may be worth quoting the dates which have been accepted by Palestinian archaeologists, though they are of course approximations only:—*Neolithic* and *Early Bronze Age*, before 2000 B.C.; *Middle Bronze Age*, about 2000-1600 B.C.; *Late Bronze Age*, about 1600-1200 B.C. A similar bulletin, illustrating the types of the *Early Iron Age* and later periods is promised in due course, and will be eagerly welcomed.

The reports of the Malta Museum—we had almost called them Professor Zammit's reports—testify to the unceasing care and vigilance exercised by the Director and his staff. It will be a surprise to many to learn that there is in Malta a large and very fine museum which, in addition to the world-famous collection of antiquities, has also departments of Natural History, Art and Mineralogy. The archaeological department alone would require several visits before its riches could be fully digested by the student. The Reports consist largely of accounts of tombs, the majority of them rifled in antiquity, and sporadic discoveries. The age of the tombs is still uncertain, for, although many of these contain 'Phœnician' relics, some at least are known to go back to neolithic times; and it is more than probable that the 'Phœnicians' and others rifled and re-used earlier tombs. We welcome this opportunity of paying a tribute of respect and admiration to Professor Zammit, the Director; Maltese archaeology owes everything to his personality. In the past British archaeologists have not taken full advantage of the opportunities for study and exploration offered by Malta. There is a fine field awaiting them, even should they go merely for a 'busman's holiday'. The little-known megalithic buildings at Hal Tarxien, with their wonderful and well-preserved sculptures, the Hypogeum, Hajjar Kim, Mnajdra, the tombs, the cart-ruts, the cave of Ghar Dhalam, the Bronze Age site of Bahrja with its splendid incised pottery (still untouched and awaiting excavation)—all these will keep him busy; and he is sure of a warm welcome.

The annual reports of the Colchester Museum are well-known. The museum contains one of the finest collections of Iron Age and Roman pottery in the kingdom. The present report contains the sad news of the death of Mr A. G. Wright, who was the Curator for a quarter of a century, and who did so much to make it what it now is. We

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learn that (like so many others) the museum is understaffed and we hope that the wish expressed by the Chairman and Curator—that an Assistant Curator be appointed—may be fulfilled.

ARCHAEOLOGICAL MAP OF ITALY on the scale of 1 : 100,000. Chiusi Sheet, Istituto Geografico Militare.

The first sheet of the projected archaeological map of Italy has at last appeared; it contains a hundred and eighty-seven entries in red, blue, orange and purple. There is no attempt at producing a period map, but different periods are shown on the same map by means of different colours. There is no attempt at showing the relief of the ground except by contour lines, the base map being an outline map printed in grey. As an index map no doubt it fulfils a useful purpose.

BRIGHTON AND HOVE ARCHAEOLOGIST. Number 3, 1926.

The form and contents of this number reflect great credit on the Society and its editor. There are not many Societies of the size we imagine the Brighton and Hove Society to be which produce such admirable publications.

Messrs. Toms and Herbert clear up the Roman villa at Preston, in Brighton itself—a useful, though, naturally, not very exciting paper. Mr Toms further contributes a very informing and important paper on 'Valley entrenchments east of the Ditchling Road' illustrated by plans drawn by Mr Gurd from measurements made by Mr Toms. Mr Gurd is well-known to archaeologists for the very high standard of draughtsmanship which characterizes his drawings. Perhaps the most interesting plan is that on page 44 which shows a valley-entrenchment later than a terrace-way of the double-lynchet type. Now we know that valley-entrenchments are, for the most part, of prehistoric origin, and there is no reason to suppose that this one is any later in date. This gives a respectable antiquity to the double-lynchet way in question. The Curwens contribute an article on Port's Road, the ancient road of Portslade, also illustrated by Mr Gurd; and the remaining articles are valuable, but for the most part, of purely local interest. There is a good article by Mr Law on 'Old Dovecotes', illustrated by photographs.

THE HISTORY AND CIVILIZATION OF ANCIENT MEGARA, 1. By E. L. HIGBARGER. Baltimore, Johns Hopkins Press. [Johns Hopkins Univ. Studies in Archaeology, no. 2]. 1927. pp. xvi, 222. \$2.50.

This is the first part of the author's comprehensive work on the history and civilization of ancient Megara, which before the Peloponnesian War played a by no means unimportant part in Greek affairs and for so small a state took an active share in colonization. Selinus in Sicily was a Megarian foundation, but her greatest colony was Byzantium. He commences with an account of the topography and monuments which acts as a kind of new commentary to the Megarian section of Pausanias. Then come two useful chapters on the cults and mythical kings. Next after the Dorian Invasion and the colonizing period follow accounts of the tyranny of Theagenes and the struggle with Athens over Salamis. The Social Revolution and the age of Theognis act as a transition to a detailed description of the part played by Megara through the classical period down to Hellenistic times.

The author has done useful work in this compilation of our existing knowledge about Megara and its history and his discussion of various debatable points, even if a

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final solution is not reached, undoubtedly assists in that direction. Some of the most interesting problems are connected with prehistoric Megara and with its omission from the Homeric Catalogue. The author by the archaeological evidence shows clearly that Megara was a typical prehistoric site and that both Nisaea and Caria must have been town-sites then. He rightly rejects Wade Gery's suggestion that 'perhaps there were no pre-Dorians' in Megara, but goes too far in saying that archaeology favours a Dorian invasion in two streams and that 'Dorian' objects occur on the Acropolis at Athens. It would be wiser at present to maintain an agnostic attitude about archaeological evidence for the Dorian invasion, for we do not know what typically Dorian objects were like. The Geometric bronzes and pottery which some hold to be Dorian represent a phase in the evolution of Greek culture, and although some external influence undoubtedly contributed towards the formation of that phase, we cannot yet isolate or identify precise features which could be proved Dorian. The theory that in Homer Megara was part of Boeotia is rejected, probably rightly, for Homer's silence about Megara can be explained by supposing that it was in a state of temporary eclipse like Thebes. The 'Mycenaean' graves in Salamis fall in the period of transition between the Bronze and Iron Ages, and so do not prove that Salamis was a 'Mycenaean' site, but rather suggest that possibility. It is much to be hoped that Megara will be further explored for prehistoric remains which should throw much light on its earliest history. Then we hope that the author will add to this present study an archaeological survey of Megara with a map, which this volume lacks. Indeed the only plan is one illustrating Pausanias' routes and it is completely unworthy of a serious treatise.

A. J. B. WACE.

SIXTH AND FIFTH CENTURY POTTERY FROM RHITSONA. From excavations made at Rhitsona by R. M. Burrows in 1909 and by P. N. Ure and A. D. Ure in 1921 and 1922. Edited by P. N. URE. Oxford University Press; London, Milford. 1927. pp. x, 112, and 25 plates. 21s.

The cemeteries of Boeotia have long been noted for their amazing richness in pottery of all kinds, but have, however, unfortunately been largely exploited by tomb robbers for the sake of Tanagra figurines once so popular. As a result comparatively little is known about the development and history of Boeotian pottery and it has been so far of little use for chronological purposes in excavations on classical sites in that region. It was therefore a stroke of good fortune that the cemetery at Rhitsona (probably the ancient Mykalessos) fell into good hands, those of the late Dr Burrows and of Professor Ure. Their excavations have been carried on for several years with scientific care and the results have thrown quite new light on Boeotian pottery and revised its dating. This is yet another instalment of the very numerous finds from that cemetery—no exception to the rule, as the length of the list of previous papers dealing with its vases shows—and there is still more to come. The excavators' practice of setting themselves the question whether or no each vase was placed in the grave on one single occasion has led to useful observations on funeral customs. The grave-contents are set out with unlimited patience in matters of detail, but perhaps we miss the breadth of view which the excavators claim cannot be achieved without detailed accuracy. Both are essential, but here we have only one. Each vase is just a vase and serves as a cog in the wheel of chronology, for there is little effort to analyze it further as a funeral offering, a domestic vessel, or as a work of art, though the fact that a few have been previously published elsewhere hints that some are worth noticing for themselves. The manner in which the excavations were conducted and the finds were recorded is admirable and should be a model to

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others. It is good too to have the record fully published with the careful analysis of grave-contents which has enabled the excavators to work out a valuable chronological series. The uninitiated will however find the elaborate detail rather bewildering, and we should be grateful if the excavators could simplify matters a little to help us obtain the breadth of view desired.

A. J. B. WACE.

LATIN EPIGRAPHY: an Introduction to the Study of Latin Inscriptions. By the late SIR JOHN EDWIN SANDYS; second edition, revised by S. G. CAMPBELL. Cambridge, 1927. pp. xxiv and 324. 12s. 6d.

It is a pleasure to welcome this second edition of Sir John Sandys's well-known handbook, considerably improved by the careful and judicious editing of Mr S. G. Campbell. As a general account of the subject, intended, as the preface explains, for classical students who were interested in Latin literature, but were not necessarily aiming at becoming specialists in Latin epigraphy, its merits are now familiar, and need no detailed commendation. Sir John Sandys did not claim to be a specialist in epigraphy nor did he propose to write a book that should be of use to specialists; his manual, an expansion of the chapter contributed by himself to the *Companion to Latin Studies*, retains in its expanded form its original purpose—that of giving the ordinary classical scholar some insight into epigraphy, its problems, its methods, and its results. Thus the author's aim differed completely from that of, for instance, Monsieur Cagnat in his *Cours d'Épigraphie latine*, which is plainly intended to assist its readers towards the first-hand study of inscriptions. Hence, when Sir John Sandys in his preface calls attention to his own departure from the established practice of epigraphical manuals, and takes credit for cutting out the customary 'elaborate dissertation on Roman Names', 'long lists of Roman Officials', 'disquisitions on the intricacies of the *cursus honorum*', and so forth, and for substituting 'a survey of the principal references to, or quotations from, Latin inscriptions in Classical authors', which 'has not hitherto been attempted in any manual', he is in effect merely enlarging on the difference of aim which separates his book from those he is criticizing. Of his first three chapters—a collection of passages about inscriptions in ancient writers, a history of modern epigraphical collections, and an account of the Latin alphabet—the first two are utterly useless to the epigraphist, while the third contains much material which he does not need and omits a good deal that he does; whereas the information about names and officials, which these replace, are absolutely vital to anyone who is working at inscriptions for himself. The upshot is that whereas anybody who has much to do with Latin inscriptions keeps his Cagnat where he can grab it without moving from his chair, he will allow his Sandys to find a home on the top shelf. But this is said in no spirit of ingratitude. For its purpose, Sandys's manual is admirable; and granted its character, such minor blemishes as an over-reliance on Hübner's *Exempla* for illustration (Hübner's drawings are not really faithful copies), or the reproduction of a very inferior photograph of the great Scottish distance-slab, need not be insisted upon.

R. G. COLLINGWOOD.

THE OUTLINE OF HISTORY: being a plain history of Life and Mankind. By H. G. Wells. Fourth revision. Cassell. 1926. 2 vols. 36s.

The last re-issue of this famous book deserves some notice in our pages, if only for the reason that it gives so large a proportion of its space to prehistory. There are two volumes in this edition with something under four hundred pages in each, and of these

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well over a hundred are devoted to the time before writing. It is in fact that part of the whole story of man's evolution in which Mr Wells's special talents are best displayed. He has collated with admirable industry and impartiality the works of the general investigators of prehistory—Keith, Keane, Osborn and many more—and has used a shrewd commonsense and above all his own special faculty of imaginative reconstruction on this material with very attractive and persuasive results. It is difficult to say in which part of this earlier section Mr Wells really enjoys himself most, when he is describing the weird and incredible creatures of the primeval slime or when he is thinking out again the lives and thoughts of the earliest men. In this work he has been very notably seconded by Mr J. F. Horrabin, whose ingenious diagrams,* time-charts and pictures based on palaeolithic cave-paintings add enormously to the value of the 'Outline', especially of this, the fourth remodelling. It is undoubtedly much improved in every way as a popular book, though it is, of course, large and—for the great public—far too expensive. It is not a specialist's book in any section, but it has very special qualities which are accentuated in this edition. By these it has made its mark in the world. They seem to us mainly three. The first is that of creating wonder and curiosity. Interesting and exciting things are selected with an unerring instinct, so that the reader, especially the inquisitive but comparatively untutored reader, leaves off with a feeling of added interest and above all of amazement. 'Who would have thought that history could contain all that?' Then comes the imaginative quality, in which naturally the novelist is pre-eminent. In all parts of the story the writer is trying most of all to see life from within as the men of that time were actually living and feeling it. This is the more successful in the earlier portion which, from the scarcity of the remains and the complete absence of written records, leaves the field open to the reconstructive writer. Thirdly, comes Mr Wells's dominant conviction, in which the writer of this notice agrees profoundly with him, that 'progress' is the keynote to the whole, that we are in history face to face with the supreme movement of existence, and that this is demonstrably in the past towards a higher and fuller state of being. It may lead on to inconceivable heights in the future, and in the truth of this perception the moral and even the religious value of history lies. This is the greatest general idea grasped in our times and belongs to all mankind: Mr Wells has done yeoman service in making it current among all English-speaking people.

F. S. MARVIN.

THE NATIVE HILL FORTS OF NORTH WALES AND THEIR DEFENCES.

Presidential Address to the Cambrian Archaeological Association. By WILLOUGHBY GARDNER, F.S.A. (*Archaeologia Cambrensis*, December 1926).

Mr Willoughby Gardner's work on the hill-forts of North Wales is well-known to all British archaeologists and in this presidential address he takes the opportunity to review the present state of our knowledge on this very perplexing subject. The primary difficulty lies in the fact that, where these forts have been excavated, it has been shown in most cases, conspicuously in the great strongholds of Tre'r Ceiri in Carnarvonshire, Dinas Penmaenmawr, Pen-y-gorddyn and Dinorben—the last two dug with such interesting results by Mr Willoughby Gardner himself—that they have been either built or rebuilt and extensively occupied during the later phases of the Roman occupation

* One new one in this edition (p. 78) deserves special mention. It is a diagram of the relationship of human races, fitted into the map of the Old World. It leaves a permanent impression on the mind, which is a rare thing in diagrams.

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from the second to the fourth centuries A.D., whereas in other parts of Western Europe Romanization implied generally the desertion of the old hill-top strongholds in favour of valley settlements rendered habitable for their inhabitants by the 'Pax Romana', in Wales the reverse process appears to have taken place. However we may account for this,¹ the fact remains that the Welsh hill-forts fall into a class by themselves among British camps. Their peculiar features are in part attributable to their exceptionally late date compared with other hill-camps elsewhere and to the influence on their construction of Roman engineering methods. This is the explanation given by Mr Willoughby Gardner of, for example, the parapet walks on the ramparts of Tre'r Ceiri, Caer Drewyn, Pen-y-gorddyn, and the last period at Dinorben, which is dated by his own excavations to the end of the third century A.D., and also of the elaborate entrances with well developed internal guardrooms found in the three last named forts. It would however be a mistake to regard such features as by themselves implying a knowledge of Roman methods. The inturned entrance, which is the parent of the entrance with internal guardhouses, as is so clearly shown by the successive periods in the Dinorben fort, is found widely both in England and on the Continent in constructions which are undoubtedly long pre-Roman,² and though few of these have yet been excavated, it is probable that they will in many cases be found to contain traces of timber guardrooms built into the incurved ends of the ramparts. One example of this type recently excavated on St. Catherine's Hill, Winchester contains such rudimentary internal guardhouses, which produced not only no trace of occupation in the Roman period, but nothing characteristic even of the last pre-Roman period, and appeared from the associated pottery to have been destroyed by fire comparatively early in the early Iron Age. While therefore it is more than probable that Mr Willoughby Gardner is right in attributing these features in the Welsh forts to Roman influence, it would not be safe to use similar phenomena elsewhere as an indication of late date, without corroborative evidence.

It is very disappointing to find that the Welsh hill-forts have so far thrown so little light on that most obscure of all periods of Welsh prehistory, the early Iron Age. The fact that no datable objects have been found, for example, in the first fort at Dinorben, while it certainly suggests a pre-Roman date, is tantalizingly negative in its other refusal of useful information. For, at Dinorben, thanks to Mr Willoughby Gardner we have in the first fort what looks like a promising early Iron Age site, yet it produces nothing more helpful than corroded lumps of iron. We can only hope that Mr Willoughby Gardner will not be defeated, and that future excavations, to the urgency of which he so rightly alludes in his address, will reward his labours. Meanwhile the present paper, with its plans of the principal forts and its comparative diagrams of entrances and rampart sections, is a most useful summary of the present state of our knowledge.

J. N. L. MYRES.

AN EARLY IRISH READER. By N. KERSHAW CHADWICK. Cambridge University Press. 1927. 6s.

A reviewer inclined to be captious might pick a couple of holes in the title of this

¹ Dr R. E. M. Wheeler's theory of a native militia is the most suggestive explanation yet put forward. See *Roman and Native in Wales* (Cymmrodorion Society's Transactions, 1922).

² e.g. *Hod Hill*, Dorset; *Hembury*, Hants; *Honiton*, and *Dumpton Great Camp*, Luppitt, Devon; *Gallop Hill* and *Bar's Castle*, Dunster, Somerset; *Old Oswestry* and *Caynham Camp*, Salop. For plans, see A. Hadrian Alcroft, *Earthwork of England*. For German examples at *Altshöfe* and *Fünsterlohr*, see plans in *Prähistorische Zeitschrift* xi, 108.

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book. What is meant by 'Early Irish'? *Old Irish* and *Middle Irish* we know: these are terms with a definite meaning. But *Early Irish* has no recognized signification in the conventions of Celtic scholarship. Again, is it quite fair to call a book 'a reader' in any language when only six and a third out of its seventy-five pages contain reading matter? It would have been better to have called the book an annotated edition of the *Tale of the Swine of Mac Da' tho'*, the only text which the book contains.

The book is clearly intended for elementary students; but it may be questioned whether elementary students not equipped with a previous philological training ought to tackle Old or Middle Irish at all! The wisdom of providing a translation in a 'Reader', even one intended for self-instruction, may be doubted: and it should be unnecessary to call the attention of a student sufficiently advanced to read this tale to such elementary points as the nasalization following the word *secht*. After the publication of Professor MacNeill's historical studies, there is no excuse for using the word 'tribal' in reference to Ancient Irish social organization (p. 25). In spite of these and other blemishes the book is quite a useful one and those for whom it is intended will learn much from it. But 'Early Irish' is as impossible to popularize as Relativity.

ARCHITECTURE OF ANCIENT GREECE. By W. J. ANDERSON and R. P. SPIERS.
Revised and written by WILLIAM BILL DINSMOOR. Batsford. 1927. pp. x, 241.
21s.

Professor Dinsmoor, of Columbia University, has prepared a revised edition of the *Architecture of Greece and Rome*, of which the present is the first volume. The plan of the original book has been followed, but the revision is so thorough as almost to constitute a new work. The original authors laid great stress on evolution, and consequently adopted the historical rather than the analytical method. The development of architecture is traced from the Aegean age, which, though pre-Greek, necessarily comes under review for historical purposes, down to the Hellenistic and Graeco-Roman period. Owing to the great progress of archaeology in the last 25 years the contents of the first chapter are almost entirely new. The original authors and the reviser have always kept before them the idea of making the book not only a description but a practical guide, and from this point of view the numerous measurements given in the text, and particularly the table of dimensions of the principal Greek temples, are of great value. The section on Greek methods of construction, as discovered by a study of unfinished temples at Segesta, Selinus, etc., should also provide interest for any reader who wishes not merely to contemplate a finished work of art but to consider how it was produced. No method of arrangement is perfect, and some minor criticisms may be made:—for instance, the figures illustrating the evolution of the Ionic capital are excellently chosen, the list including some remarkable examples, such as those from the great temple of Artemis, which do not generally appear in such books; but the subject might have been made easier to the student if examples of various types, arranged historically, had been assembled on a single plate. Again, though several references are made to devices for lighting the Greek temple, this difficult problem is not discussed as a whole and consecutively.

The text is illustrated by 65 plates and 83 figures; a list of the pages on which the illustrations are to be found might well have been added to the 'Contents', but the alphabetical index of illustrations to some extent supplies this want.

The language throughout the book is technical, as befits a practical guide, but the

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path is smoothed for the uninitiated by the inclusion of a full glossary explaining all the architectural terms of which a knowledge is necessary. The general get-up of the book, as regards both the letterpress and the illustrations, is fully worthy of the subject-matter.

J. F. DOBSON.

MAYA CITIES: EXPLORATION AND ADVENTURE IN MIDDLE AMERICA. By THOMAS GANN, F.R.G.S., F.R.A.I., M.R.C.S. Duckworth. 1927. pp. 256. 21s.

Dr Gann's record of his last season's work in Central America makes lively as well as interesting reading. As in his previous books he mingles archaeological speculations and accounts of excavation with stories of Indian customs, descriptions of birds and anecdotes of travel, and few individuals, having once started to read, will be so ungrateful as to complain of his occasional lapses in syntax and his rather frequent colloquialisms. Field archaeologists working in this country may indeed be allowed some feelings of envy when comparing their own sparse finds with the lavish ruins of Honduras and Yucatan.

The most important discovery made by Dr Gann last season was undoubtedly that of the city which he has named Tzibanché or 'Writing on Wood', from the single inscription found, which was carved on a wooden lintel. On this site he discovered six large temples, five of which were explored and measured. These were remarkable for the extreme narrowness of their inner chambers. As is well known, the Maya, owing to their ignorance of the principle of the true arch, were always restricted to a span of about 16 feet for their roofs, but the breadth of the chambers at Tzibanché seldom exceeded 3 feet and was sometimes less. The elucidation of the dated inscription found here, and the further exploration of the site will be looked for with interest, for Tzibanché is situated in the extreme south of Yucatan, and was presumably one of the first centres of the Maya new empire. The book also contains fairly comprehensive accounts of Tikal and Uaxactun, as well as the hitherto little visited Tulum, where Dr Gann was shown by the natives a small Maya shrine with the idol still in place.

E. G. WITHERCOMBE.

THE ARCHITECTURE OF ANCIENT ROME. By W. J. ANDERSON and R. P. SPIERS. Revised by THOMAS ASHBY, D.LITT., F.S.A. The Historical Architecture Library. B. T. Batsford. 1927. pp. 202, and 202 illustrations. 21s.

This book is a new edition of part II of Anderson and Spiers' *Architecture of Greece and Rome*, and has been revised and largely rewritten by Dr Ashby, late Director of the British School at Rome. This fact alone, apart from Dr Ashby's own reputation, would guarantee its excellence. At the present time, when in contemporary architecture, horizontal lines—to the exclusion of the soaring outlines of Gothic—seem to be more and more used, the study of ancient buildings must be of more importance to the modern architect than ever before, and it is partly with his needs in view that this work has been written. Such problems as the relative proportions of individual parts of a building to the whole, and of the possibilities and limitations of different materials, are dealt with in a general, if not in a strictly technical sense. But the book will also appeal to other readers. It gives a comprehensive account of all the important surviving Roman buildings, and will be invaluable to the more sober-minded tourist, bent upon some study of the great works of antiquity. It

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will also prove to be a mine of information for the classical scholar and ancient historian.

The plan is clear and convenient, dealing as it does first with very early work and then with buildings up to the period of the Empire. Materials are next considered and lastly a classified description is given of the building under such headings as forums, *thermae*, arches, aqueducts, etc. This system of grouping is very satisfactory as it helps the reader to compare, say, the various columns now remaining, though they may be scattered over the world. To the archaeologist who devotes himself to medieval architecture the book is full of suggestions; and when he reads of the barrel vault with ribs which still survives in the Roman temple at Nîmes he is led to wonder if the debt of the eleventh century architects to Rome has ever been fully realized.

The illustrations, both photographs and architects' drawings, are excellent, though the habit adopted in the text of referring to plates without mentioning the page to which they correspond is irritating. The convention, alluded to on page 12, of painting men's flesh red and women's white, is ascribed to Mycenaean times, but might surely be referred further back to Egyptian wall-paintings. The book contains a useful glossary of architectural terms, a bibliography, adequate maps, and, for the unhistorically minded, a list of the dates of the Roman emperors. D. P. DOBSON.

DIE KULTUR DER BRONZEZEIT IN SÜDDEUTSCHLAND. Von Dr. GEORG KRAFT. Benno Filser, Augsburg. 1926. pp. 153 and 58 plates. 35 R marks.

In south-west Germany the hill country was densely populated during the middle and late Bronze Age; for, with the dry 'subboreal' climate then ruling, these regions, today heavily timbered, were largely open heath. The pastoral tribes living on the uplands, like contemporary people in Britain, buried their dead under barrows. But the graves are far more richly furnished than the British so that the period may be divided up into several typological phases. Dr Kraft, who has studied intensively the barrows of the Swabian Alb, distinguishes four main epochs there. In the valleys there was a yet older bronze-using culture while the hill folk were still living in a stone age. The recognition of this overlap between stone and bronze enables Dr Kraft to point out the ancestry of his tumulus builders: they were descended from bell-beaker folk and the makers of corded-ware—elements also recognized in Britain—mingled with autochthonous Alpine stocks.

Kraft's concise and splendidly illustrated book will be a great boon to all interested in comparative archaeology and constitutes an authoritative guide to an obscure and important period, a close study of which may throw light on some of our own problems. Readers must not be deterred by the hideous and unnecessary 'Verdeutschungen' (*Schichtenkunde* for *Stratigraphie*, etc.) which Kraft's own countrymen have very properly repudiated. V. GORDON CHILDE.

THE EARLIER INHABITANTS OF LONDON. By F. G. PARSONS. Cecil Palmer. 1927. pp. 240. 10s. 6d.

This book does not live up to its title. It attempts to cover the whole of the kingdom, and London is dragged in at intervals in order to justify the title. Moreover, the treatment is extremely unequal. Professor Parsons is a recognized authority on physical anthropology, and we make no criticism of those parts of his book which come under this heading; but unfortunately he has not been content with approaching the

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subject from this angle, and the result is a medley of information, much of it incorrect or erroneous. There are some astounding statements on almost every page. On page 24 long barrows are contrasted with 'dolmens', though 'dolmens' frequently occur in long barrows. In speaking of Kit's Coty House the evidence of Stukeley's large engraving is conclusive that the 'dolmen' stood at the east end of a long barrow; but no reference is made to this, or to the Professional Paper on the megaliths of south-east England published by the Ordnance Survey, where this engraving is reproduced in facsimile. On page 47 it is stated that neolithic camps on the Chilterns are common. Not a single neolithic camp has been recorded in the Chilterns, however, and, if we define the Chilterns as the region lying between the Oxford-Bucks. lowlands on the north-west, the Thames on the south-west, and the Tertiary country on the south-east and east, there are only a very few camps of any sort within this area. The statement that 'agriculture, and probably other arts, were brought into Britain from time to time' is true but hardly helpful. The hoards of the late Bronze Age are spoken of (p. 52) as if they had some connexion with the Beaker people who lived a thousand years before. The Malden hoard in particular belongs unquestionably to the late Bronze Age or early Iron Age. Dr Parsons' words on page 52—'the northern track ran straight from Canterbury to the ford at Westminster'—make us rub our eyes. Does he really mean to suggest that this, one of the most unimpeachable of Roman roads, was really used by the Beaker people? Incidentally a writer who is dealing with the 'earlier inhabitants of London' should know that the barrows in Greenwich Park are Saxon burial-mounds and have nothing whatever to do with the Beaker people of 1800 B.C. or thereabouts. (See Douglas, *Nenia Britannica*, 1793, p. 89, and *Arch. Journ.* i, 166-8). The map on page 51 might have been drawn by a blind man; nor is there any clue to what the figures mean. It is *not* 'easy to believe' as is stated on page 64 'that when the Beaker folk came into Britain they brought the Celtic language with them'; and such an opinion is a direct contradiction of the statement on page 72 that Celtic tribes began to reach Britain about six centuries before the Christian Era. The interpretation (given on page 67) of the circular trench at Broadstairs in which burials were found is unconvincing, since it is based on the old-fashioned popular association of prehistoric burial places with battles, and this has no foundation in fact. The statement on page 100 referring the reader to Windle's book on the Romans in Britain, and another statement on page 91, shows that Dr Parsons' choice of authorities is an unfortunate one, and doubtless accounts for many of the errors pointed out above.

The fact is that when a specialist attempts to deal with matters outside his own province he nearly always selects the most speculative and least reliable writers as his guides, and the present book is no exception to the rule.

DIE FUNDE AUS DEN PRAHISTORISCHEN PFAHLBAUTEN IM MONDSEE
(Materialien zur Urgeschichte Österreichs, Heft. 3). By LEONHARD FRANZ and JOSEF WENINGER with contributions by ELISE HOPMANN and FRANZ ANGERER.
Vienna, Anthropologische Gesellschaft, 1927. pp. 112 and 42 plates.

The joint authors have admirably fulfilled the rather thankless task of publishing a mass of highly important material dredged up by the late M. Much from two pile-villages on the shores of the little lake in the Austrian Alps. A full publication was the more urgent in that the finds are not preserved with the bulk of the Austrian material in the fine Naturhistorisches Museum but in the University's Institute where they are

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less generally accessible. The peculiar importance of the sites is due to the relatively large number of flat celts and other primitive copper objects they yielded. Much brought these types into relation with hypothetical exploitation of the copper lodes in the Alps in late neolithic times, and the authors have adopted his view while giving due weight to the objections urged by Kyrie. Indeed they explain—most plausibly—the location of the stations on the Mondsee and adjoining Attersee by the assumption of water-borne trade in the metal. The culture of these first Alpine metallurgists would be essentially that fusion of Danubian (II) and Nordic elements typically represented at Jordanmühl in Silesia—a view advanced by the reviewer three years ago. Franz and Weninger refuse to see in the habit of dwelling in pile-villages an integral trait of any neolithic culture-complex on Gräbner's lines, justly remarking that other traits of his 'bow-culture' go back to Mesolithic times, but forgetting that the same is to some extent true of lacustrine dwellings. It is pointed out that the Mondsee evidence is unfavourable, if not fatal, to Reinerth's and Vouga's theory that pile-dwellings were not raised above the actual waters of lakes.

Elise Hofmann's valuable section on the vegetable remains brings out many interesting points: the Mondsee folk cultivated *cummar* and *vulgaris* wheat, millet, barley, pears and apples but not flax. The illustrations and descriptions leave nothing to be desired.

The whole excellent work is published as a *Festschrift* in honour of Prof. R. Much. One notices with shame that, while several subscribers hail from Scandinavia, Finland, Poland and Serbia, neither Britain, France, Italy nor Spain are represented in the list. Yet any self-respecting archaeological library must have the book. V. G. CHILDE.

CATALOGUE OF EGYPTIAN HIEROGLYPHIC PRINTING TYPE. By A. H. GARDINER. Oxford University Press. 1928. pp. 45.

Dr Alan Gardiner has conferred a great benefit on students of Egyptology by his public-spirited action in reforming the hieroglyphic type now in use. This catalogue marks the immense advance which the subject has made since Theinhardt's catalogue of type was published in 1875. In 1892 Petrie first called attention to the actual meanings of the signs and their importance in showing the tools and other objects which must have been in use when writing was introduced. Since then Egyptian palaeography and epigraphy have made rapid strides; and those days have passed away when the facsimile reproduction of an inscription had to be re-drawn in order to conform to preconceived ideas of what hieroglyphs should look like. Dr Gardiner's type, drawn by such accurate draughtsmen as Mr and Mrs de Garis Davies, must always be a standard work for the forms of hieroglyphs in the New Kingdom, and can therefore be used by a student in any case where an inscription, or fragment of inscription, must be dated by the forms of the signs only and not by content. In several instances Dr Gardiner has given, in addition, forms of the Old Kingdom where they differ markedly from the New Kingdom forms: as, for example, the sign *kp*, 'to fumigate', which is clearly an incense-burner in the early examples though unintelligible later. Altogether the book is extraordinarily useful and interesting; it is not a mere list of type available for printing hieroglyphs, it is in itself a means of studying the palaeography and epigraphy of the New Kingdom.

M. A. MURRAY.

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STUDI ETRUSCHI. Vol. 1. Comitato Permanente per l'Etruria. Florence. 1927. pp. 588 and 75 plates. 150 lire.

The amount of attention that is now being devoted in Italy to the study of Etruscan antiquities may be gauged by a perusal of this large volume, which contains the papers read at the congress held in 1926. It is impossible to deal with it here as fully as it deserves; but we may console ourselves by the reflection that the problems which were there discussed have recently come up again, though, as is natural, the congress of this year being international a rather wider survey was taken.

The volume opens with an interesting paper by Antonielli, in which he remarks on the strange lack of remains of the Bronze Age in Central Italy, and on the juxtaposition of inhumation and incineration in the same cemeteries, showing, he maintains, the contemporaneous presence of different races. Both of these points bear on the much debated question of the origin of the early inhabitants of Etruria, and of the Etruscans themselves—though (as Cultrera emphasizes in a later paper) it is now fairly generally held that they came from Asia Minor, and were comparatively few in number. Cultrera maintains that the rapid spread of Etruscan civilization and art was due to the receptivity of the Italic peoples, rather than to the capacity for assimilation of the Etruscans themselves, and indeed prefers to speak of Italic rather than of Etruscan art.

Other papers go more into detail—thus there are some interesting particulars in regard to the ancient topography of Arezzo;—a description of discoveries at Vulci during the excavation of a canal for electric power, in which a fine centaur and a hippocampus of the end of the 6th century B.C. were found, while the famous François tomb was reopened;—a brief account of the recent discoveries in the necropolis of Caere by Mengarelli, who is in charge of the excavations there, with numerous illustrations: he points out that only a very small part of it has as yet been excavated.

Mengarelli also contributes a note, with some interesting reproductions, of parts of the old archaeological survey of Etruria, on which Pasqui and Cozza did some valuable work (hitherto unpublished) between 1885 and 1891.

Another note shows us how much a few potsherds may tell us about the history of a site. All the books state that Cosa, one of the loveliest places in Etruria, overlooking the lagoon of Orbetello, with a splendid circuit of fortifications, was only founded in the 4th century B.C., and extended to the foot of the hill, under the name of Succosa, in the imperial period. And now the careful researches of three Italian archaeologists, Minto, Pernier, and Levi have led to the discovery of prehistoric pottery at the foot of the hill, a fact which, as is rightly pointed out, upsets the whole of this so called history: for it is not reasonable to suppose that this commanding site remained unoccupied when the slopes of the hill were inhabited.

T. ASHBY.

ETUDES ROMAINES. 1. LA BASILIQUE PYTHAGORICIENNE DE LA PORTE MAJEURE. By JÉRÔME CARCOPINO. Paris: L'Artisan du Livre. 1927. pp. 416 and 24 plates, 1 folding plan. 30 francs.

The object of the series of which this is the first volume is, as explained in the preface, to describe to the French public the various monuments of antiquity which have come to light in the city of Rome during and after the war. Excavations made of set purpose by Italian officials very naturally languished during the period between 1915 and 1923; but Fate willed that a number of remarkable chance discoveries should fill the gap; and the most remarkable was that of the underground basilica near the

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Porta Maggiore. In April 1917, the ballast under the main line to Naples, about 100 yards to the east of the gate, began to give way; and the railway engineers found that the rails lay almost directly over the circular airshaft of an ancient corridor, which soon led into what proved to be the atrium of the basilica, the floor of which lay some 45 feet below the level of the line. In order to be able to consolidate the line it was necessary to explore the whole monument, and take measures for its permanent preservation.

The building has, since then, been often described and discussed, though the official publication, the text of which is to be written by Dr Bandinelli, has not yet seen the light; so that only portions of the remarkable stucco decorations of the interior are as yet available for study by scholars who are not fortunate enough to have seen the building itself. They have however, been fully described by Mrs S. Arthur Strong, with the collaboration of Miss N. Jolliffe, in the *Journal of Hellenic Studies*; and the folding plan at the end of the present work gives an adequate idea of their arrangement and of the varied nature of the subjects which are to be found in them.* It is, indeed, from these representations, and from them alone, that we can hope to derive any information as to the nature of this remarkable building. M. Cumont had already pointed out the striking analogy between this building, sunk at a considerable depth below ground and lighted from the atrium, with the ritual arrangement of the caves of Pythagoras, and had therefore ascribed it to one of the Pythagorean sects which had lived on from the Republican period into the early Empire; but M. Carcopino develops the theory a good deal further. He accepts the conjecture of the original discoverers of the basilica—that it lay within the area of the gardens of Statilius Taurus, whose voluntary death in 53 A.D. only anticipated his inevitable condemnation for practising 'magical arts'; and he accepts also the date to which they assign it. He then proceeds to show in great detail how all the various subjects of the decoration fit in with what we know of the tenets of Pythagoreanism, of the details of its liturgy, of its hell on earth and heavenly paradise. He concludes with an explanation of the scene in the apse—the leap of Sappho into the sea at Leucas—not as a glorification of suicide, but as purification from her earthly love for Phaon, and a rebirth of her soul to higher things.

The book is a brilliant attempt to solve many difficult problems, and requires a more detailed treatment than it is possible to give it here: but the skill and scholarly ability with which M. Carcopino has dealt with this interesting subject is deserving of all praise.

T. ASHBY.

THE ANTIQUITY OF MAN IN EAST ANGLIA. By J. REID MOIR. Cambridge University Press. 1927. pp. 175, 25 plates and 74 figs. 15s.

It is useful to have a collected account of the views of Mr Reid Moir placed before us in a convenient form. Mr Reid Moir has been labouring for many years in the building of a pyramid upon its apex, and it is particularly useful to one of the opposing school to be able to realize at a glance how hazardous is the foundation upon which such an imposing superstructure is built.

* It would seem, from the fact that the earth in the interior of the basilica had already been passed through a sieve, that the building had been already ransacked in the Renaissance; though it is very strange that we should have no record of the discovery of so remarkable a building, even though it had yielded no sculptures, bronzes, or other small objects—which were entirely lacking in the building when found, and had indeed been removed in ancient times, when it ceased to be used almost before its decoration was completed, owing to the death of its owner and the persecution by Claudius of other members of the sect which worshipped in it.

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Prehistory is largely founded upon the reliable identification of prehistoric industries in flint or other stone. Mr Reid Moir starts with a statement and illustration of the main distinction between the work of nature and the work of man which represents nothing of the truth. With such a foundation, it is no wonder that the superstructure is spreading out more and more dangerously overhead.

The frontispiece is typical. It represents a stone that is described as a 'great hand-axe weighing 7 lbs., from the Cromer Forest Bed'. There are many students of prehistory who view the smashing of flint with different eyes and who can see no value or interest in this stone except to go into the foundations of a road. This is due, not to prejudice arising from the date of the stone, but to a different judgment of flint fracture. The Heidelberg jaw cannot be far removed (in age) from the Cromer Forest Bed; no one can doubt that humans, or humanoids, were in existence at this time. It could be argued that these people might have reached the stage of evolution of the 'stone age', but this has not yet been established.

There are flints from the Cromer Forest Bed that are more suggestive of man's work than the one represented in the frontispiece. But unfortunately these have to be selected from an immense mass of broken flints that is known as the 'stone-bed'. When one digs in that stone-bed for oneself, one realizes how the stones have been jammed together, crushed one against another, and smashed by violent natural agencies. The selection of convincing artefacts from an ordinary river gravel lies in a different category from the selection of not-quite-convincing resemblances to implements out of a mass of natural smashings. In prehistory the 'not quite' may often be transposed into the 'quite not'.

Serious confusion is introduced between (1) the flakings on the open beach at Cromer (there is good evidence to prove that these still continue to be made by the sea); (2) the Palaeoliths which are also found on the open beach, but which are derived from the river gravels that overlie the glacial deposits; (3) the flakings of independent origin which are found in the stone-bed, to which reference has already been made. The glacial and river gravels referred to above are further confused in the book before us. These very different items are so mixed up that the reader who is unfamiliar with both the individual specimens, and the sites of their discovery, must receive a completely erroneous impression of the evidences.

A few years ago a neolithic implement derived from the surface soil came down nearly to the level of the beach, in a mixed sludge-stream in the cliffs at Sidestrand—not an unusual occurrence. Shortly after the discovery the reviewer examined the site very carefully. This becomes a 'flint implement of Early Palaeolithic-Chellean type from Lower Glacial Clay'. Bathing-shoes may be found in 'not-quite' boulder clay just as much as this neolithic implement.

In other branches of science, such as chemistry or physics for example, a doubtful observation can usually be repeated, and its accuracy or error thus established. Unfortunately this is not possible in prehistory, and it is here that we find the peculiar danger and weakness that is inherent in the subject itself.

One could continue, point by point, to lay bare the insecure foundations of the vast superstructure so clearly revealed to us in this book. It may be that the fulness of time will bring an automatic crash by over-loading. If this book helps to achieve that result and thus to clear the ground for a sounder prehistory to be rebuilt upon a sure foundation it will have done an inestimable service.

S. HAZLEDINE WARREN.

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KULTURGESCHICHTE DES NORWEGISCHEN ALTERTUMS. Von A. W. BROGGER. Oslo (H. Aschehoug & Co.), also Leipzig, Paris, London, and Cambridge, Mass. 1926. Instituttet for Sammenlignende Kulturforskning, publication series A, VI. pp. 246.

This important book may justly rank as one of the small and brilliant band of regional studies that not only consolidate the archaeological and historical research of recent years but are themselves signal contributions to knowledge by virtue of the profound insight and scholarship of the author. Thus, while it may be charged against this book that most of the assembled facts are already well-known, Dr Brogger's careful choice of material, his commentary upon this evidence, and his interpretation of it, undoubtedly provide a distinguished and challenging example of proper judgment that successfully provides us with a new and stimulating vision of Norway's distant past.

The author's first duty is to observe that the typological method of assessing race, cultural status, and chronology, is, at any rate in its usual text-book form, seriously at fault in Norway, and that one certainly cannot, in that country, dispose of cultural changes by a facile explanation in terms of climatic variations and of successive invasions. Dr Brogger appeals rather to the economic history of his land as being most of all likely to illustrate the necessities and behaviour of early man, wherefor the little-changing struggle for existence on the coasts and on the sea, in the woodlands, on the mountains, and in the pastures, are the main subject of his inquiry, and it is in accord with the result of his studies under these headings that the prehistory of Norway is unfolded before us.

We begin, then, with a survey of the littoral cultures, mostly of a 'Stone Age' character, where it is possible to distinguish the sites yielding no evidence either of domestic animals or of agriculture, from those where the bones of domestic animals and traces of cereals are to be found. But as we have to reckon with the complication of seasonal variations in habitation, a temporary change from agricultural and pastoral life occasioned by prolonged hunting expeditions, it is clear that the relative chronology is excessively difficult to decide. The main conclusion, however, is that of these hunting and fishing grounds those where domestic animals are found are not likely to be of the pure Stone Age, and that many are plainly sites occupied at the proper seasons over a long stretch of time, almost, in fact, up to the historic period. And here, of course, the excessively simple equipment necessary makes it hard to distinguish between the remains left by Stone Age, Bronze Age, and Iron Age man. We may, however, speak of an earlier Viste- or Nøstvet-period showing a purely hunting culture that is typical of the beginning of the Norwegian Stone Age, and we may add to this a short 'neolithic' period wherein the arts of agriculture and the domestication of animals were introduced. Nevertheless, in general the finds from the supposed Stone Age sites must for the present rest under suspicion. On the other hand, the penetration and occupation of the interior can be shown to be a relatively late achievement, and the 'reindeer-culture' here is not earlier than the Iron Age; thus the 'Ur-folk' of the Hardangervidda are dismissed as the product of romantic imagining, and we are told that most of the finds representing them belong really to the early Iron Age, if not to the Migration and Viking periods or even to early medieval times. The author next describes the rock-engravings, of which the majority are explained as the hunters' magic of the old littoral stations. The psychology of hunters must be everywhere of much the same nature, so that parallels from far afield, for instance from France, are of little chronological importance, and a Bronze Age or Iron Age date is thought to be probable for the Norwegian group.

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A study of the hunting weapons themselves shows an astonishing survival of primitive Stone Age types throughout the later periods, and it is made clear that Bronze is never more than an occasional luxury. In fact, the Bronze Age culture was mainly lithic, and, except for the limited use of the metal axe, almost an unaltered continuation of the Stone Age. Indeed, the Stone Age in Norway ends only with the introduction of iron; and this, next to the introduction of domestic animals and of agriculture, marks the most significant development and change in the early cultural history of Norway. The full knowledge of the uses of the new metal is thought to be a result of indirect contact with Roman culture, and it is this knowledge of iron that is primarily responsible for the full exploitation of interior Norway.

As to the races concerned in this story, there is little to be said, at any rate until the anthropological material collected by Schreiner has been digested. But the evidence, particularly that of place-names as analyzed by Magnus Olsen, hints that the men of the Stone-Bronze Age were germanic, and to this there is nothing to add except that there was a steady immigration of other germanic peoples from the 3rd to the 6th century A.D. But as to the dubious and difficult material provided by Pytheas, Ptolemy, and, later, by Jordanes, it is as well to study collaterally with Dr Brogger's succinct account the learned *Det Svenska Rikets Uppkomst* by Birger Nerman. For Dr Brogger does not consider his book complete with a description of the prehistoric inhabitants, but in a condensed and admirable section he carries the story onwards to the time of the death of St. Olaf.

The only criticism to be urged against this excellent book is the modest objection that the lack of a map and a few illustrations embarrasses the reader who is not intimately familiar with the material described.

T. D. KENDRICK.

THE ENGLISH CASTLES. By E. B. d'AUVERGNE. Werner Laurie Ltd. 1926. pp. 263. 21s.

This volume is evidently the fruit of great industry and it contains a great deal of useful detail. The author's avowed intention is to combine architectural and historical material in suitable proportions, but his plan is executed in a somewhat unsatisfactory manner. That part of the work dealing with architecture would be greatly improved by the addition of a few diagrams and the substitution of good photographs of castles for the very second-rate 18th century prints which unaccountably form the bulk of the illustrations. The chief flaw in the historical portion of the book is a strangely uncritical acceptance of the more lurid tales of medieval and other chroniclers, whilst the book as a whole suffers from the extraordinarily old-fashioned high-flown fustian of its style. For example, Henry VIII, for whom Mr d'Auvergne seems to feel an almost personal abhorrence, is variously styled 'a gross villain', 'a baffled debauchee', 'fickle tyrant', and 'the blackest scoundrel that ever wore a crown', whilst Corfe Castle, pleasantest of ruins and beloved of artists is described as a 'gloomy ruin, reminiscent of anguish and dark deeds', which 'totters to its fall as though oppressed by the horror and iniquity of which it has been the scene'.

E. G. WRITHYCOMBE.

GREECE OLD AND NEW. By ASHLEY BROWN. Methuen. 1927. pp. 255. 20 illustrations and map. 12s. 6d.

Messrs Methuen's firm is well known for its glorified guide books, and this volume on Greece is well up to their high standard. Mr Ashley Brown writes lucidly

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and even gracefully and manages to convey a great deal of historical and archaeological information in a pleasant and straightforward manner. Perhaps the most interesting part of the book, however, is the description and illustrations of the monasteries of Mount Athos and the Meteoron.

E. G. WITHERCOMBE.

ROMANTIC JAVA, AS IT WAS AND IS. By H. S. BANNER, F.R.G.S. Seeley, Service and Co. 1927. pp. 282. 21s.

Java is a name of interest to any archaeologist, but those who expect to find mention in this volume of Trinil and its skull will be disappointed. There is some description of the country and its people and an account of the history and customs of the island, but the best part of the book is to be found in the interesting illustrations.

E. G. WITHERCOMBE.

A GUIDE TO THE QUTB, DELHI. By R. A. PAGE. Calcutta: Government of India Central Publication Branch. 1927. pp. viii, 36, 12 plates.

This is a reprint in handy form of Mr Page's able and scholarly Memoir no. 22 of the Archaeological Survey (1926), but without the introduction, most of the plates and notes, and all the appendices except one. These excisions are unfortunate, for the notes and plates set forth the evidence on which Mr Page bases his interpretations and correlations, while the introduction brings out clearly the significance of the Qutb monuments in the history of Indo-Saracenic architecture. The one surviving appendix (on conservation) is of merely departmental interest.

When in 1193 A.D. Qutbu-d-din Aibak, Amir of Muhammad Ghori and founder of the Delhi Sultanate, established himself in his new capital, Saracenic architecture had already 'crystallised into defined forms'. But it was at that moment a far cry from Delhi to the centres of Islamic culture, and a mosque was an urgent necessity, so Aibak assembled the local craftsmen and the fragments of 27 Hindu temples and built a mosque in which Hindu influence predominates. But the balance was quickly reversed. The Qutb Minar, which Aibak began and his successor Altamsh (1211-36) finished, is 'consistently Saracenic', and, as the Qutb buildings prove, by the time of Ala-ud-din Khalji (1296-1316) the transition was already complete; thenceforward Muhammadan architecture in north India, though never losing the Indian touch, is 'self-determined'.

F. J. RICHARDS.

BOOKS RECEIVED

Things Seen at the Tower of London. By H. Plunket Woodgate. Seeley and Co. 3s. 6d.

Things seen in Switzerland in Summer. By Douglas Ashby. Seeley and Co. 3s. 6d.

The Grey Shrines of England. By Arthur Grant. Chambers. 7s. 6d.

The Earth, its nature and history. By Edward Greenly. Watts and Co. 1s.

Concerning Man's Origin; being the Presidential Address given at the Meeting of the British Association in Leeds on August 31, 1927, and recent Essays on Darwinian subjects. By Professor Sir Arthur Keith. Watts and Co. 1s.

Human Environment and Progress; The Outline of World Historical Geography. By W. R. Kermack. W. and A. K. Johnston. 4s.

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- The Stone Age.* By E. O. James. The Sheldon Press. 3s. 6d.
- Ancient Civilizations.* By Donald Mackenzie. Blackie. 12s. 6d.
- Marc Lescarbot, Nova Francia, a Description of Acadia, 1606.* Translated by P. Erondelle, 1609, with an Introduction by H. P. Biggar. Routledge. 12s. 6d.
- The History of Iron Manufacture.* By Henry Louis. A paper read before the Sheffield Society of Engineers and Metallurgists, 10 December 1924. J. W. Northend Ltd., Printers, West Street, Newcastle.
- Woodbrooke Essays.* By Rendel Harris. Heffer, Cambridge.
- Late Glacial Clay Varves in Himalaya, connected with the Swedish time-scale.* By Erik Norin. *Geografiska Annaler*, 1927, tt. 3.
- The Sussex County Magazine*, December, 1927. Edited by Arthur Beckett. 1s.
- Memoirs of the Archaeological Survey of India*; no. 30. The Beginnings of Art in Eastern India, with special reference to sculptures in the Indian Museum, Calcutta, by Ramaprasad Chanda, 1927, 5s. 9d.; no. 32. Fragment of a Prajnaparamita Manuscript from Central Asia, by Pandit B. B. Bidyabinod. 3s. Central Publication Branch, Government of India, Calcutta.
- The Origins of Civilization.* By E. N. Fallaize. 1928. Benn's sixpenny library.
- The Beginning of Things* :—*Ancient Mariners*, by C. Daryll Forde, 1927; *First Player*, by Ivor Brown, 1927; *Gods and Men*, by W. J. Perry, 1927; *Here we go Round*, by Evelyn Sharp, 1928. Gerald Howe. 2s. 6d. each.
- The Messianic Idea.* By Chilperic Edwards. 1927. Watts and Co. 4s. 6d.
- Some Questions of Musical Theory.* By Wilfrid Perrett. 1926-8. 2 vols. Heffer, Cambridge. 12s. 6d.
- The Mermaid and Mitre Taverns in Old London.* By Kenneth Rogers. 1928. Homeland Association. 10s. 6d.
- Hydriothaphia.* By Thomas Browne. Noel Douglas replicas. 1927. 9s.
- Corridors of Time* : iii. *Peasants and Potters*; iv. *Priests and Kings.* By Harold Peake and H. J. Fleure. 1927. Oxford; Clarendon Press. 5s. each.
- The Glamour of Near East Excavation.* By James Baikie. 1927. Seeley Service. 10s. 6d.
- The Kohogaki Kenkyu.* Number 2. December 1927. Tokyo.
- The Divine Origin of the Craft of the Herbalist.* By Sir E. A. Wallis Budge. 1928. Culpeper House, 7 Baker street, London. 5s.
- The Book of the Cave of Treasures.* By Sir E. A. Wallis Budge. 1927. Religious Tract Society. 10s. 6d.
- Late Quaternary Glaciation of the North-Western Himalaya.* By Erik Norin. *Geografiska Annaler*, 1925, II 3.
- Relief Chronology of the Chenab Valley.* By Erik Norin. *Geografiska Annaler*, 1926, I 4.

Antiquity

A Quarterly Review of Archæology

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SEPTEMBER 1928

Editorial Notes

THE excavation season in Great Britain and Ireland is in full swing as we write, but will be practically over by the time this number appears. Woodhenge and the adjacent small circles are being explored by Captain and Mrs Cunnington with highly satisfactory results; the Trundle (near Goodwood, Sussex) by Dr Cecil Curwen; the lake-village at Meare by the Somerset Archaeological Society; St. Catherine's Hill (Winchester) by the Hampshire Field Club; the village at Chysauster (near Penzance, Cornwall) by Mr T. F. Kendrick, of the British Museum; and Belas Knap (Glos.), by H. M. Office of Works. The excavation of four Romano-British towns—Colchester, Caerleon, Richborough, and Alchester (Oxon.)—is in progress (see p. 353). We mention only a few of those undertakings which are personally known to us; there are doubtless many others on foot. Of those mentioned the majority are due to the enterprise of private individuals, associated in some of the cases with archaeological societies.

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At Woodhenge there are, in addition to Woodhenge itself, about a dozen small burial-circles, ranged for the most part in a line to the south-south-east. One is double and shows also signs of holes; and there is a small circle of holes without any ditch. All these smaller circles were, like the essential features of Woodhenge, revealed by air-photography—they are practically invisible on the ground; and prints from negatives made this year by the R.A.F. are being used to guide the work.

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Air-photography is also indirectly responsible for the excavations at the Trundle, for it was an air-photograph which drew attention to a hitherto unnoticed inner circle, representing probably an older 'camp' on the same site. Here too the photographic print is being used as a map, though the remains in question are plainly visible on the ground.

Furthermore, the spell of dry weather we have just enjoyed has produced a fine crop of new discoveries in several widely separated regions, some of them being of first-rate importance. These have all been made by Officers of the Royal Air Force in the course of their duty. The photographs taken will be published in due time, some of them in ANTIQUITY. For the present, therefore, we shall say no more, except that the results surpass the most sanguine expectations.

A propos of surface aids to excavation, we have been asked by a correspondent to explain 'General Pitt Rivers' method of discovering pits and ditches by means of hammering the surface with a pick, referred to in "Man and his Past" (p. 214)'. The method is quite simple. When the ground is struck, the sound given back is much deeper and more 'booming' over a silted-up and often invisible ditch than elsewhere, where it has been undisturbed. By walking and hitting the ground with the butt end of a pick, it is quite easy to locate such hidden ditches and pits, and even to ascertain their exact width. It was thus that General Pitt Rivers found the Angle Ditch on Oakley Down in Cranborne Chase. By using this method on Worthy Down, near Winchester, the writer and the late Mr Hooley recovered and pegged out the plan of a Celtic village; the plan was transferred to paper and a sealed copy deposited, before excavation began, with the Society of Antiquaries. When compared later with the results of excavation, there was little to alter. The method of 'ramming' or 'sounding' was used at Stonehenge by Colonel Hawley and is being extensively employed at Windmill Hill by Mr and Mrs Keiller and their staff. At the latter place a specially made wooden ram is used, resembling the one used by navvies. The method is probably not applicable to certain soils; it works best on the bare chalk, where there is only about six inches of humus.

Another correspondent suggests that 'an opportunity for discussion and correspondence in ANTIQUITY would serve a distinctly constructive

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purpose'. We agree; and we can generally find room for the ventilation of new ideas and for fresh interpretations of observed facts. But the border-line between friendly argument and polemics is easily overstepped. When once an argument has begun it is apt to become lengthy and involved, and sometimes heated. The details of controversy are generally dull and technical and more suited to the meetings of a learned society. Even a friendly argument might pall if conducted in a Review appearing at intervals of three months, especially if the parties to it lived on different continents, thus perhaps involving even longer intervals of time between each letter. Space also is limited.

For some of these reasons we have deliberately ignored the Sligo controversy, to the regret of another correspondent who charges us also with neglecting Ireland. (The Sligo controversy turns on certain limestone boulders which are claimed as humanly-made objects, and as evidence for the occupation of Ireland by Man during the Palaeolithic period). We think the charge is exaggerated.¹

The quarrels of the learned are notorious; but flints seem to have some unusually provocative quality in this respect. Can it be that they still retain an 'aura' of forgotten fights in far off eolithic days?—or is there some simpler explanation? The main bone of contention is whether certain English flints were chipped by Man or by Nature. It is a case of great importance, for upon the verdict depends nothing less than the antiquity of man. The facts to be proved are (1) that the flints have been humanly worked; (2) that, if so, they were found in an *undisturbed* geological deposit of the age claimed.

In recent controversies in East Anglia both claims have been put forward by some and denied by others. Either the 'implements' have failed to carry conviction, or subsequent disturbance of the deposit has been alleged. The earliest rude attempts of Man to make a tool would naturally resemble Nature's handiwork; but there are several facts which suggest rather a natural origin for rostro-carinates and eoliths—the immense numbers found, for instance, on a given site. Another criticism is based on the fact that not a single fragment of a human bone has ever been found, in spite of the abundance of the

¹ See for instance Vol 1, pp. 97, 98 and plate, pp. 124-6, 253 and 510, but, with the whole world to cover, we must ask for patience. We have not forgotten Ireland, and have received the promise of a certain article when the time for its publication shall have come.

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'implements' and the diligence of their discoverers. (The Foxhall jaw-bone, now lost, has no evidential value).

The point at issue between Mr Hazzledine Warren and Mr Sainty (see pp. 344-5) concerns an alleged disturbance of the boulder-clay in which an undoubtedly 'human' implement was found. It is a point which, as Mr Warren says, cannot now be settled; for it arises from an observation which from the nature of the case cannot be repeated. We would remark, however, that boulder-clay is a formation whose subsequent disturbance or rearrangement is often very hard to detect; and was it not from under alleged boulder-clay that there came the famous Ipswich skeleton?—at first claimed by Mr Reid Moir to be of pre-Glacial age.* He subsequently realized that the supposed boulder-clay under which the skeleton was found was nothing more than hill-wash†, as claimed all along by his opponents. This hill-wash covers a prehistoric floor with flint implements and pottery, which Mr Reid Moir regards as Lower Aurignacian, but which others consider to be not earlier than Neolithic. If, in an observation of such fundamental importance as this, Mr Reid Moir—and, one may add, many other observers of great experience—could be misled by appearances, surely it is equally possible that Mr Sainty may have made a similar mistake?

The whole world has now realized the importance of the UR Excavations, which yielded such magnificent finds last season. Those who have seen them at the temporary exhibition in the British Museum will have noticed with what skill they were unearthed and preserved. The excavation of the royal cemetery will be continued this winter, and there are good reasons for expecting more valuable discoveries. The readers of ANTIQUITY made a substantial contribution to the funds last year, and we are now asking them to help again. A form is enclosed in the present number for this purpose.

During October and November the Editor will be travelling in the Middle East, out of the reach of correspondence, and all communications concerned with ANTIQUITY should be addressed to the Assistant Editor, 24 Parkend Road, Gloucester.

* *Proc. Prehistoric Soc. East Anglia*, vol. 1 (part 2) 1912, p. 194; and *Journ. Roy. Anthr. Inst.*, vol. XLII, 1912, p. 345.

† *Nature*, 12 October 1916.

PLATE I



ROCK-PICTURES AT ZOLAT EL HAMMAD
PA. W. B. K. Shaw

Rock-pictures and Archaeology in the Libyan Desert

by D. NEWBOLD

OUT of Africa there is always something new, as Aristotle wrote in the fourth century B.C., and although the Libyan Desert is one of the most desolate areas of the world's surface, recent explorations have shown that there are many archaeological discoveries to be made which will throw considerable light on the early history of peoples and their migrations in North Africa.

In the eastern Sahara and in the Libyan Desert, there are still many unexplored tracts, and even, it is probable, several unvisited oases, particularly in the great white spaces on the map which stretch southwest and southeast of the Kufara oasis-group.

The borderlands of French Wadai, Italian Cyrenaica, and the Anglo-Egyptian Sudan, and the forbidding deserts which lie between Tibesti and the Fezzan, are still most imperfectly known: consequently it would perhaps be premature to attempt to draw any detailed picture of the early movements of Libyans and their negroid neighbours to the south. But it may be of use to future explorers and archaeologists in this area to recapitulate recent discoveries and to indicate what kind of archaeological remains they are likely to find and where to seek them.

The recent discoveries are mainly confined to rock-pictures and stone implements. Some pottery has also been found, but usually under circumstances, and of a type, which preclude any definite association with the rock-pictures.

Before describing the sites seriatim, I should like to offer, with the diffidence of an amateur, a few general comments on field archaeology in North Africa. Like all sciences, archaeology has shown of late years a tendency, peculiarly distressing to the novice, towards excessive specialization, especially in the typological sphere. Classification by types in the case of implements, and by technique in the case of rock-pictures, has been carried to such a pitch that other evidential data have been distrusted or ignored. Archaeology, after all, is a branch of the

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wider science of anthropology; and our ultimate aim in the study of rock-pictures and implements is to identify their artists and their wielders—to put them, as it were, on the prehistoric map, and to discover their origins and their relations with the outside world. If we succeed, we turn prehistory into history; but if we stop short of this, confining ourselves to mere description and classification, we are shirking the main issue and stultifying a noble science. It is quite true that by a careful study of types and the compilation of distribution-maps lines of culture-drift and actual migrations of races may often be verified. But prehistory in North Africa is not as prehistory in Europe. Its darkness comes right down to the Middle Ages. Untold centuries separate the painted bisons of Altamira from the incised antelopes and ostriches of the south Libyan Desert. Moreover Altamira must tell its own tale, whereas we can call in the aid of classical and Arabian geographers and even of native traditions in our attempts to piece together the ethnography of the eastern and southern Libyans.

The identification of old place-names and race-names is regarded by many archaeologists as too dangerous a pastime to be indulged in freely, and it is quite true that rash speculation in this direction on the part of otherwise eminent scholars¹ has led to some confusion in the past. The remedy, however, is not simply to avoid this branch of study, but to undertake it with eyes open and with some knowledge of the languages concerned. It does not need much more than a working knowledge of Greek, Latin and Arabic, together with a good map, to extract from the classical and medieval geographers a mass of very interesting data about oases still unexplored or only partially surveyed, and about the proto-history of the Libyan and Libyo-Ethiopian tribes who inhabited north-east Africa both off and on the Nile, for several millennia before the advent of the Arab in the seventh century A.D.

An example may be found in the identification, which I have nowhere seen made, of Jarabub oasis with Ptolemy's Lacci Palus. This identification is proved by a statement in the anonymous Arabic history of Siwa oasis that Jarabub was formerly known as Lakk. Similarly we know from native traditions that the pre-Arabic (Tibbu?) name of Kufara was Tazerr. This is clearly reflected in the present name of the western oasis of the group, Taizerbo (= people of Tazerr, cf. Kanembu = people of Kanem), and also in Ptolemy's Aezari, whom he places hereabouts on the map (T- being the Berber prefix).

¹ e.g., C. Müller, in his commentary on Ptolemy, and Vivien St. Martin in *Le Nord de l'Afrique dans l'Antiquité* (1863).

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Again the Sebridæ, whom Ptolemy places in the Dongola deserts, were probably inhabitants of El Bekri's lost oasis of Sobrou, which may be identified with Nukheila or Zerzura.

There are a number of other coincidences and parallels awaiting the student of ancient geography and they all tend to confirm the accuracy not only of the Greek, Roman and Arabian geographers, including the much-maligned Herodotus, but also of the medieval and later maps, e.g. Hondius, d'Anville, etc.

It must be remembered that nearly all the rock-pictures and implements in the Libyan Desert are surface finds. The former are mostly incised on exposed boulders or hillsides, and the latter have been picked up from the bare desert. Consequently no question of stratification arises and almost the only excavation that can be done is the digging into ancient written and oral records.

The classical writers are very fond of comparing the Libyan Desert with a leopard-skin owing to the number of oases dotted over its surface. Dionysus Periegetes describing it as *κυανῆσι κατὰστικτός φολιδόσσει*; Priscianus repeats the simile. The general impression we get is of a great desert with numerous stepping-stones of oases and wells, allowing free play to tribal migrations from north to south.

Herodotus, who names some twenty tribal groups in East Libya, relates an interesting story of an exploration by five noble youths of Nasamones from Cyrenaica to the upper Niger, and also tells how the Garamantes, who inhabited the Fezzan, hunted the 'Ethiopian Troglodytes' in four-horse chariots. It is clear that by the fifth century B.C. there was a good deal of contact between the Libyan tribes of the Mediterranean coast with its hinterland and the negroid peoples of the far interior.

By Strabo's time, several centuries later, the Garamantes had extended their range further eastward and were clearly a large inland ethnic group. Strabo is the first writer to notice the several oases: Herodotus knew only Siwa and Kharga. Strabo also notices the 'Nubæ who live in Libya', probably negroid Libyans, ancestors of the present Nuba who inhabit the hills of northern Kordofan.

The elder Pliny preserves accounts of Roman expeditions in 19 B.C. against the Garamantes into the heart of the Fezzan, and mentions two interesting ethnic names which speak for themselves: the *Libyægyptii*, who presumably inhabited the Egyptian oases, and the *Leucoæthiopes*, the 'white Sudanese' probably inhabiting the Halfa-Dongola reach of the Nile and Selima, and possibly north-east Kordofan.

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His names of tribes west of Dongola afford interesting matter for speculation.

Ptolemy who, because he was a good astronomer, has been falsely accused of being a bad geographer with a penchant for rectangularity in siting tribes, covers inner Libya with a mass of names. This siting of nomadic tribes in what is now more or less waterless and uninhabitable desert has aroused the ire of Oric Bates and other students of Libyan ethno-geography, but the discoveries, described below, of rock-pictures at Owenat and near Bir Natrun and Nukheila, of implements in the open desert west of Terfawi, of the great depot of jars at Pottery Hill, all confirm d'Anville's statement that 'Ptolemy was informed of more circumstances of the interior parts of Africa than any other geographer'.

Space forbids amplification of this, but I have prepared a list of identifications from his place-names and tribes with their modern counterparts for publication elsewhere, and am convinced that in them we can trace references to Kufra, Ennedi, Tibesti, and Wadai, and even to hills and water-sources in Dongola, Darfur and Kordofan.

The later Roman and Byzantine geographers need not detain us; but there is a continuous trickle of information from them which bridges the gap between Ptolemy and the medieval geographers. Throughout there is a gradual shifting of tribes to the South. A good deal may be learned by following the movements of the three ethnic groups, the Garamantes, the Mazices, and the Nubae. The Garamantes figure in history for some nine hundred years, and ranged over an enormous territory. Fra Mauro's map of 1457 marks all north central Africa down to Guardafui as Garamita. By the Middle Ages they had become the Gorhani and the Dongola deserts were known as Gorham. Today their name still lingers in the Guraan, a Tibbu tribe inhabiting Ennedi and Jebel Owenat. In fact it is probable that, speaking broadly, the Garamantes were the ancestors and precursors of all the Tibbu in the southern Fezzan and Wadai.

The Mazices figure in history from dynastic times, if we identify them with the Mazoi of the monuments, through Herodotus, Hecataeus, Lucan and others, right up to the present day when they appear as the Imoshagh (Tuareg). They have been placed by various writers all over North Africa, especially Tunis and Cyrenaica. The unknown author of the *Orbis Descriptio Junioris Philosophi* (380 A.D.) describes in the inner deserts 'barbarorum paucam gentem quae sic vocatur Mazicum et Aethiopicum'. This Sudanese attribution was also true of the Mazoi, who lived somewhere in the Halfa region for over two thousand

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years. It is therefore another piece of evidence of early Libyan penetration into the Sudan.

The Nubae, Nobades, Nubians, etc., are a puzzling racial entity. But we know that some of them were in the Egyptian oases in the times of Lucan and Procopius and that the present Nuba hillmen of northern Kordofan have many old connexions with the Libyan north.

The later classical geographers, who deal with Libya, *e.g.* the Spaniard Orosius (417 A.D.) and the African bishop Corippus (696 A.D.) bring us almost into the era of the Arabian and other medieval historians and geographers. The Arabians are of especial interest as they continue the 'leopard-skin' picture of the Libyan desert by dotting 'lost' oases and wells in its interior. El Bekri (1068 A.D.) tells us of the lost oasis of Sobrou somewhere beyond Dakhla and the efforts of a Cyrenaican Emir to find it. Idrisi (*c.* 1140 A.D.) describes the country of the Tadjerin or Tajuwin, which is clearly the Bir Natrun-Nukheila area. Ibn Haukal writes of goats and sheep gone wild in the chain of oases stretching west from the Nile. Ibn el Faqih describes a great west-east caravan route from Gana (the Tunisian oasis of Djanat ?) to 'the Egyptian Oasis Malsana', (*i.e.* Dakhla). The anonymous history of Siwa, mentioned above, which probably dates from the fifteenth century, speaks of the kingdom of Santaria (Siwa) extending to Nubia, of the ruined Ard el Ghaffar, a country south of Dakhla, prosperous of old, and of the yearly raids in old times by the 'people of Tebu in the Sudan' upon Siwa. Yacubi and others mention the 'towns' of Merenda and Marawa, which lay somewhere in the south Libyan Desert. The Rabbi Benjamin of Tudela (1170 A.D.) confirms Ibn el Faqih's caravan route by saying:—'From el Wah (Dakhla) caravans go fifty days through the Sahara Desert to the town of Sawila in Gana'.

To the above evidence we can add a fairly long list of Berber place-names still in current use in Wadai, northern Darfur and northern Kordofan.

These are the elements of the Libyo-Sudanese mosaic. In the centuries before Christ, there were no camels in these deserts. Transport must have been by horse, ox and donkey. There is doubtful evidence of the use of carts. Consequently the desert *étapes* must have been shorter than they are now, as none of these animals can emulate the long thirsty marches of the camel. This explains the greater frequency of oases and wells in ancient times. For it is clear that between one and three thousand years ago there was greater lateral and vertical movement across the Libyan Desert than there has been

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since the Middle Ages. What then has happened to all these wells and oases? A common answer is often given in one word—Desiccation. Geological and historical evidence, at least in the eastern Sahara and the Libyan Desert, is against this. There is no solid evidence that climatic conditions in Egypt or Tripoli or the northern Sudan have changed in the last four thousand years. The Roman system of water-tanks in Marmarica and Cyrenaica points to the reverse for part of that period. Herodotus, several centuries earlier, describes desert conditions equaling those of today. Egyptian archaeological evidence is conflicting. Descriptions of plunder taken from conquered Libyans, the Meshwesh, Rebu, and other tribes, in the eighteenth, nineteenth and twentieth dynasties, show that they possessed numerous herds, which presupposes some water and much grass somewhere, but probably only on the coast; while the good condition of mud-brick temples, etc., on the Nile and in the oases points to a rainless climate.

The truth probably is that the Libyans were better well-diggers than the Arabs, and occupied many oases, which have since been abandoned and have become silted up with sand. This is, of course, in a sense desiccation, but due to human and not natural agencies.

I have described the historical background of the Libyan Desert at some length, although sketchily, partly because there has been very little written about it, and partly because it is a necessary preliminary to the understanding of the early migrations, which were responsible for the antiquities discovered recently and described below.

I began with Herodotus, the Father of History, for purposes of convenience, but it must not be imagined that the migrations date only from the sixth or fifth century B.C. There are several allusions to Libyans in the Sudan on the Egyptian monuments, from the third millennium B.C. onwards, but the topography is very difficult to disentangle, and the most that we can say definitely is that the Tamahu or southern Libyans had, by a very early date, pressed southwards through the oases of Kufara, Dakhla, Nukheila, Selima, etc., and were on alternate terms of trade and raid, and probably intermarriage, with the negroid races of the northern fringes of Wadai, Darfur, and Kordofan. One expedition demands especial mention. In the time of Pepi II (c. 2500 B.C.), we find the Sudanese counter-attacking the intruding Libyans. Harkhuf, an Egyptian trader from Assuan, travelling to the Sudan on behalf of Pepi, met the black raiders coming north. 'I set forth upon the oasis road and I found the chief of Yam going to the land of Temeh to smite Temeh . . . and I pacified him'. 'This land of

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Temeh must have been either the Selima-Shebb-Terfawi area or the Libyan bank of the Halfa Nile.

We may consequently take it for granted that for roughly 3000 years at least, between 2500 B.C. and 500 A.D., Libyans and their descendants, the Tibbu and Berber, were moving across the deserts between the Mediterranean coast and the Sudan, and establishing temporary settlements in most of the habitable oases.

Let us now examine the actual archaeological finds. They are all marked on the accompanying map (fig. 1, p. 268). As the record of their discovery is largely one of travel, they are best listed under the exploratory expeditions in the course of which they were found. The list does not pretend to be complete and does not include dynastic remains, *e.g.* at Kharga and Dakhla, but only such antiquities as are mainly of Libyan origin, and lie in the central and southern part of the Libyan desert.

The greater part of the finds in the south were made in the course of two expeditions of mine, the first in 1923 from El Obeid to Bir Natrun and back, a distance of 1070 miles, of which about half was over desert, and the second in 1927, from El Obeid to Halfa, by Bir Natrun, Nukheila (also known as Merga) oasis, and Selima, a distance of 1015 miles, of which about 700 were within the borders of the Libyan Desert. On both these journeys large stretches of desert were covered which had not been visited by a white man, or in some cases even by the Arabs.²

On the 1923 expedition rock-pictures or other antiquities previously unknown except to some of the Arabs, were discovered at four sites.

1. ABU SOFIAN area, about lat. $15^{\circ} 30'$, long. $27^{\circ} 50'$, on two small ridges, one named Qalaat El Wish and the other, further to the south, nameless. These pictures (figs. 2, 3)* are crude drawings incised on rounded boulders. The main representation is of camels, which appear in hundreds. Pregnant she-camels, suckling foals, bodies of camelry with spears and hoisted banners (?), camels carrying two and even three men, camels with waterskins (?) dangling beneath their flanks, are portrayed over and over again. There are also giraffes, ostriches, cattle, antelopes, horses (or donkeys ?) and other indeterminate animals. There are also large numbers of more or less conventionalized human figures. Some are reduced to purely geometrical figures; others are

² Full narratives of these two expeditions will be found in *Sudan Notes and Records*, vol. VII, no. 1 (1924), pp. 43-92, and XI, no. 2 (1928), which latter will appear towards the end of this year.

* Figs. 2 and 3 in this article are reproduced by kind permission of the Editor of *S. N. and R.*



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more lifelike, and show tailed and plumed and phallic men, and one or two swastika figures. The double-plumed head-dress suggests the ostrich plumes worn by the early Libyan chieftains. They appear in Middle Empire reliefs and are especially associated by the classical writers with the Nasamones who inhabited the deserts round Siwa and Augila in the first five centuries B.C.

The presence of camels and indeed the crudity of the drawings show that they are comparatively late work. It is impossible to date them with any precision but they are probably between 2000 and 1500 years old. As specimens of early art they are not of great importance owing to this crudity and their lateness. The chief points of interest are the tailed and plumed men, the swastika figures and the very instructive series of geometrical human figures. It seems ridiculous to assert dogmatically that all the figures in the two top rows of fig. 3 represent human beings, but there is no doubt about it. There are many Continental analogies. One has only to look at reproductions, the stylized figures in the Andalusian caves,³ especially the cases of Lubrin and Jimena, to see an amazing resemblance. The Spanish pictures are of course, many millennia earlier, being late Palaeolithic or early Neolithic, so the parallel is partly fortuitous, but this tradition of conventional art, in representations of human beings at least, probably crossed to Africa in early Neolithic times and was continued for centuries.

There were numbers of figures like those shown on the bottom row of fig. 3. Even some of these are probably human figures; others may be early camel brands or tribal marks, like the marks found in 1822 by the Beechey brothers in Tripoli, cut upon the rocks in the Syrtis Major.⁴

A number of other antiquities were found at Abu Sofian. This site had not been visited by an European before, and is of especial interest as it lies in the rolling steppe-desert country where the south Libyan Desert merges into the better watered grassy plains of northern Kordofan. The area is rocky and the sites described below lie in a sandy plain surrounded by low hills, some 10-20 miles north of Qalaat El Wish. They include :—

(a) a stonewalled hosh or compound near Sheinat el Aja, about twelve miles due east of Id Abu Sofian; it is about 200 yards

³ E. A. Parkyn, *Prehistoric Art*, 1915, p. 114. M. C. Burkitt, *Pre-history*, 1921, pp. 283-3.

⁴ F. W. and H. W. Beechey, *Expedition to . . . the northern coast of Africa*, p. 161.

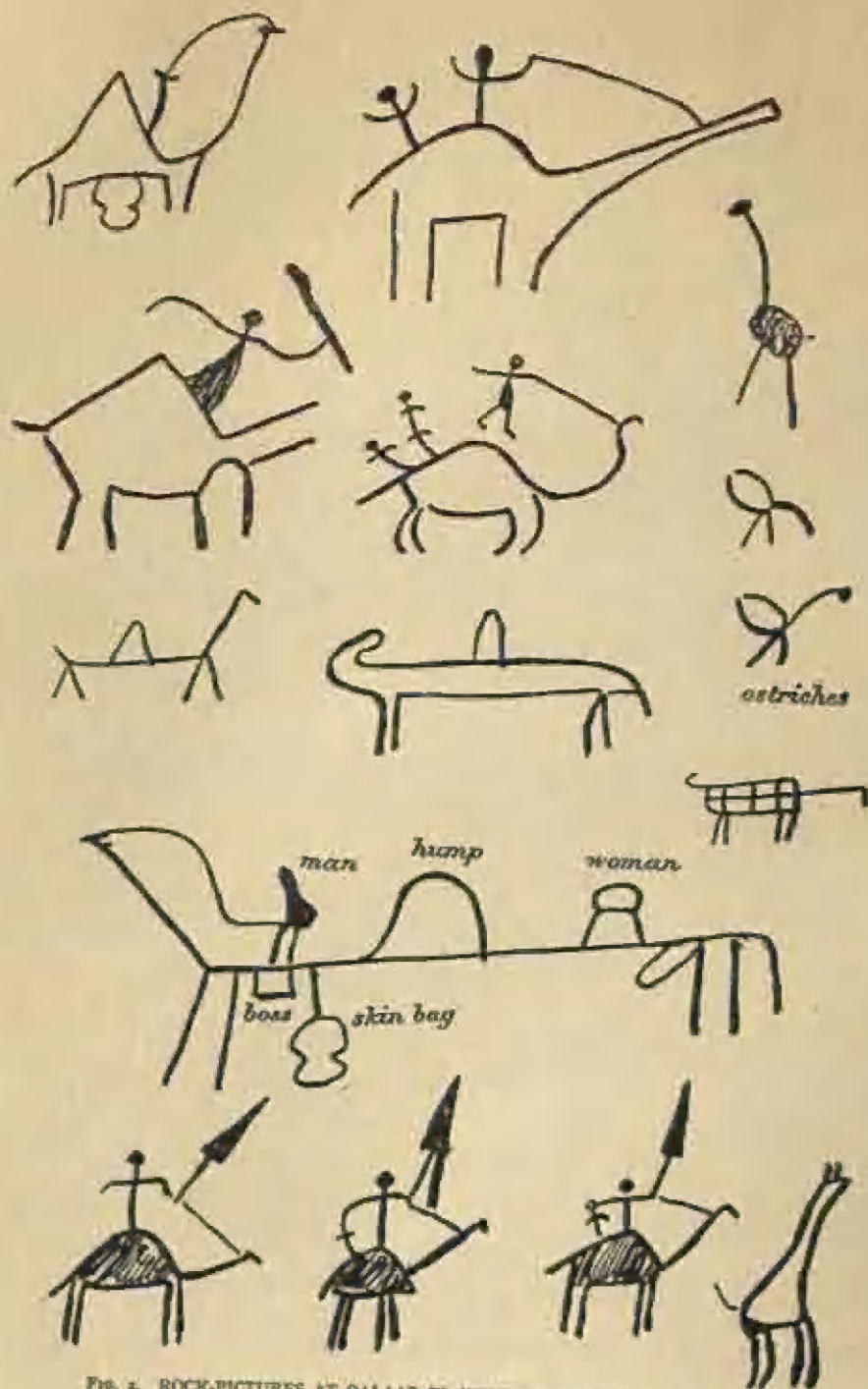


FIG. 2. ROCK-PICTURES AT QALAAAT EL WISH, NORTHERN KORDOFAN

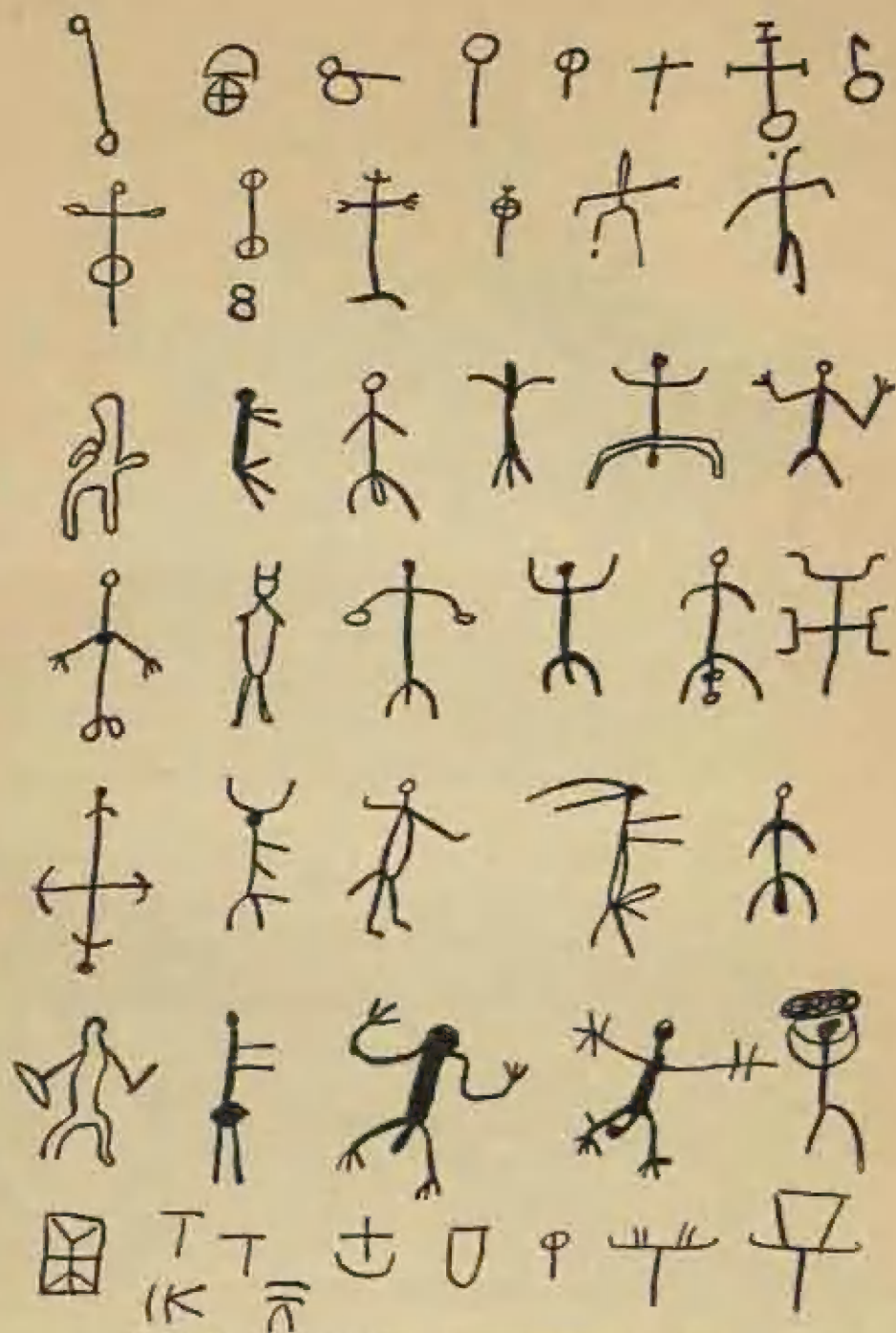


FIG. 5. ROCK-PICTURES AT QALAAAT EL WISH, NORTHERN KORDOFAN

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square with ruined walls nowhere more than three feet high ; there were scattered pottery and bones inside, and one or two pieces of iron slag. It was surrounded by old sites of habitations or middens with pottery and bones.

(b) about ten miles north-east of the well and about eight miles north-west of (a) was a group of remains comprising :

(i) another stonewalled compound with a double wall of flat unhewn stones with interspace filled with rubble. Inside stone grave-cairns and burnt brick foundations.

(ii) south of (i) two similar walled enclosures but circular and only twenty yards in diameter.

(iii) a group of three burnt brick ruins : one a circle, one some kind of foundation, one a large heap, possibly a ruined kiln. The bricks were twelve to fourteen inches long by five inches by three and a half inches. Other burnt brick remains are found at Jebel Zankor in western Kordofan,³ and at Shau Dorshid's palace in northern Darfur.⁴

(iv) a dilapidated baby pyramid of burnt brick, now about twenty feet high, built up of regular courses of red brick cemented by mortar. It has lost its pyramidal shape and the sides are a débris of broken brick, much overblown by sand. I estimated its present height as sixty courses at four inches per course. It is difficult to say how it is oriented as it is not very symmetrical, but it has a flat square top with rounded corners. It appears quite solid to the eye but there may be a concealed entrance at the north-east corner.

(c) There were many stone graves at the entrance to Wadi Abu Sofian with two peculiarities distinguishing them from the innumerable similar cairns seen all over north Kordofan and northern Darfur. Some had by their sides circles of biggish flat stones laid flush with the ground and about three feet in diameter, and others had tiny little avenues of long thin up-ended stones leading up to them. The pottery found at and near Abu Sofian included many sherds of good workmanship with impressed

³ A fine site with an ancient well, broken sandstone pillars, stone lintels with sockets, containing walls, boneheaps, and innumerable burnt bricks. No description has yet been published.

⁴ *Sudan Notes and Records*, January 1920, p. 27. H. A. MacMichael, 'The Tungur-Fur of Dar Furnung'.

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designs as well as a wheel-made pilgrim bottle, of the type which has varieties in early Egyptian pottery throughout the first millennium B.C. and several centuries later.

The whole of these Abu Sofian sites would repay expert examination and excavation. But until this has been done, judgment should be suspended, and it should not be classed amongst the more purely desert sites. The evidence, as far as it goes at present, would assign it to be middle or late Meroitic period, *i.e.* 100 B.C.-300 A.D.

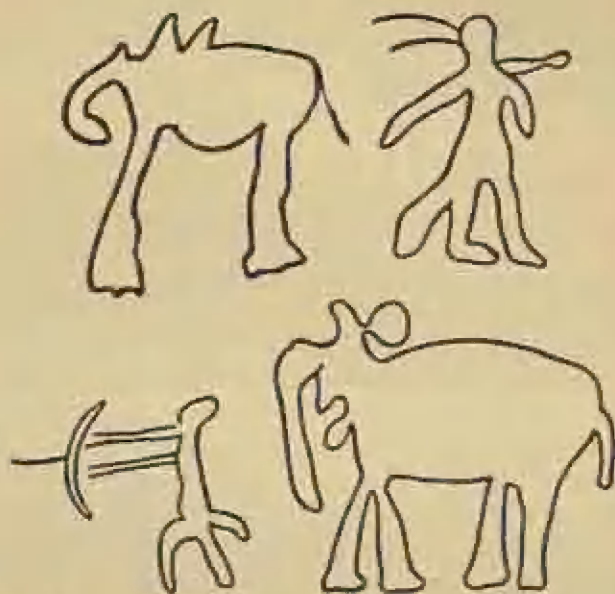


FIG. 4. ROCK-PICTURES FROM UM TASAWIR (MEN) AND ZOLAT EL HAMMAD (ELEPHANTS)

2. GELTI UM TASAWIR (The 'rock-well of the Pictures') in Jebel Tageru.

This site lay about eighty miles north-west of Abu Sofian about lat. $16^{\circ} 15'$, long. $26^{\circ} 40'$. The rock-well which gives its name to the site lies in a deep chasm where the wadi bed drops by a succession of falls into a narrow ravine with rocky sides about 120 feet high. The cliff-faces are scored with countless pictures even in the least accessible parts. The drawings showed endless cattle, also giraffes, elephants, oryx, and other indeterminate animals. There were also a number of human figures, some showing tails, some armed with bows (see fig. 4),

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a few phallic and one steatopygous. Here, as far as I could see, there were no representations of camels. The pictures were slightly less crude than the Qalaat el Wish groups and are of rather different style. When I visited this site I had completed 660 miles on camel-back and had been ill with heat-stroke for a fortnight, and so was unable to examine the more difficult parts of the cliff face, but I think it is clear from the copies I took—especially in view of the archers, elephants, and absence of camels—that the Um Tasawir pictures are of the same style and approximately the same epoch as those at Zolat el Hammad, Nukheila, Owenat, etc., which are described below, *i.e.*, early Libyan.

Jebel Tageru, from the flat top of which Wadi um Tasawir drains, is a long low tongue-shaped hill, running 80 miles from North to South and rising about 300 feet above the plain. It is composed of Nubian sandstone. Arab legend says that it was the headquarters of the white giant race of 'Anag' or 'Abu Konaan', two names given by the Arabs to the pre-Semitic and pagan aborigines of the northern Sudan. The names recall the biblical Anak and Canaan. There are several connexions between the early Libyans and Syria. However this may be, Jebel Tageru was obviously formerly inhabited. Below its western scarp I picked up a good deal of pottery and a T-shaped iron implement, probably a hoe. West of Um Gereinat, another rock-well, one of my Arab guides found some bones and the sherds of a broken 'burma' or earthenware jar, which was reconstructed by Mr Addison, Conservator of Antiquities, Sudan Government, and is now in the Gordon College Museum in Khartum¹. It is wheel-made and was pronounced Meroitic by Mr J. W. Crowfoot. The Arab also brought back a small perfect unpatterned bowl² of which two other examples have been found in these deserts.

I passed a large number of grave-cairns on the south-west and west side of Jebel Tageru, and also some grindstones and pestles of sandstone and quartz.

3. WADI HAWA. There were no rock-pictures here, but some very interesting habitation-sites. Wadi Hawa is a great valley, or dry river-bed which rises in French Wadai, probably about lat. 16° and long. 20° 30', and dies out in the Dongola deserts west of Khandak, after a curved course of about 450 miles.

In the Miocene Epoch it was probably a tributary river to the Nile.

¹ *S. N. and R.*, vol. vii, no. 1, plate iii.

² *Ibid.*, plate ii.

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As I rode across it at about lat. $17^{\circ} 25'$, long. 27° I picked up from the floor of the wadi-bed five stone implements, probably axeheads, ground and edged, but unpolished. A sixth was found a little further north among some old sites on the north bank of the valley, which covered several acres and consisted of scattered patches of bones, pottery, grindstones, and pestles, and many teeth of animals.

In our 1927 expedition Shaw and I revisited this site and after searching the ground more thoroughly found more of the stone implements and a small earthenware bowl like that found in 1923 near Um Gereinat. The six axeheads found in 1923 are figured in plate IV of *S.N. and R.*, vol. VII, no. 1. Four of the axeheads found in 1927 are shown in fig. 5. (nos. 1, 3, 4, 5). They have been identified by Mr G. W. Grabham, Sudan Government Geologist, as being some of porphyrite, some micro-diorite, and some possibly dolerite. These are all igneous rocks and it is rather a mystery whence the material was derived in this enormous area of Nubian sandstone. Judging by later finds they were probably brought from the north.

In type they are unlike any others that I have seen or heard of except (a) a neolithic implement found in Huntingdonshire and now in the British Museum⁹ and (b) two implements from America in the Fitch room of the Norwich Museum. I know of no similar African parallels either in the Congolese or South African implements, or the Nilotic types, or in the Capsian culture of Tunis. As they were all surface finds, like most desert implements, dating by stratification is impossible. There was no patination. The biggest weighed two and a half pounds. All had grooves for hafting or gripping except one triangular specimen with smooth sides (fig. 5, no. 3) very like an implement found by Mr Van der Byl in 1923 when hunting addax in the Wadi Hawa further south-west.

The pottery associated with the axeheads is probably Meroitic but may be earlier. The axeheads may also belong to the same period, but if both pottery and axeheads are to be associated with the rock pictures of Um Tasawir to the south and Zolat el Hammad to the north (described below), neither of which portray camels, then their latest date is early Meroitic, say B.C. 200. But until the site is excavated it would be unwise to do more than speculate. I should not be surprised to find them eventually dated B.C. 2000, or even earlier.

It is not easy to say whether the site was a permanent habitation

⁹ Evans, *Ancient Stone Implements*, fig. 83 (a) p. 137.

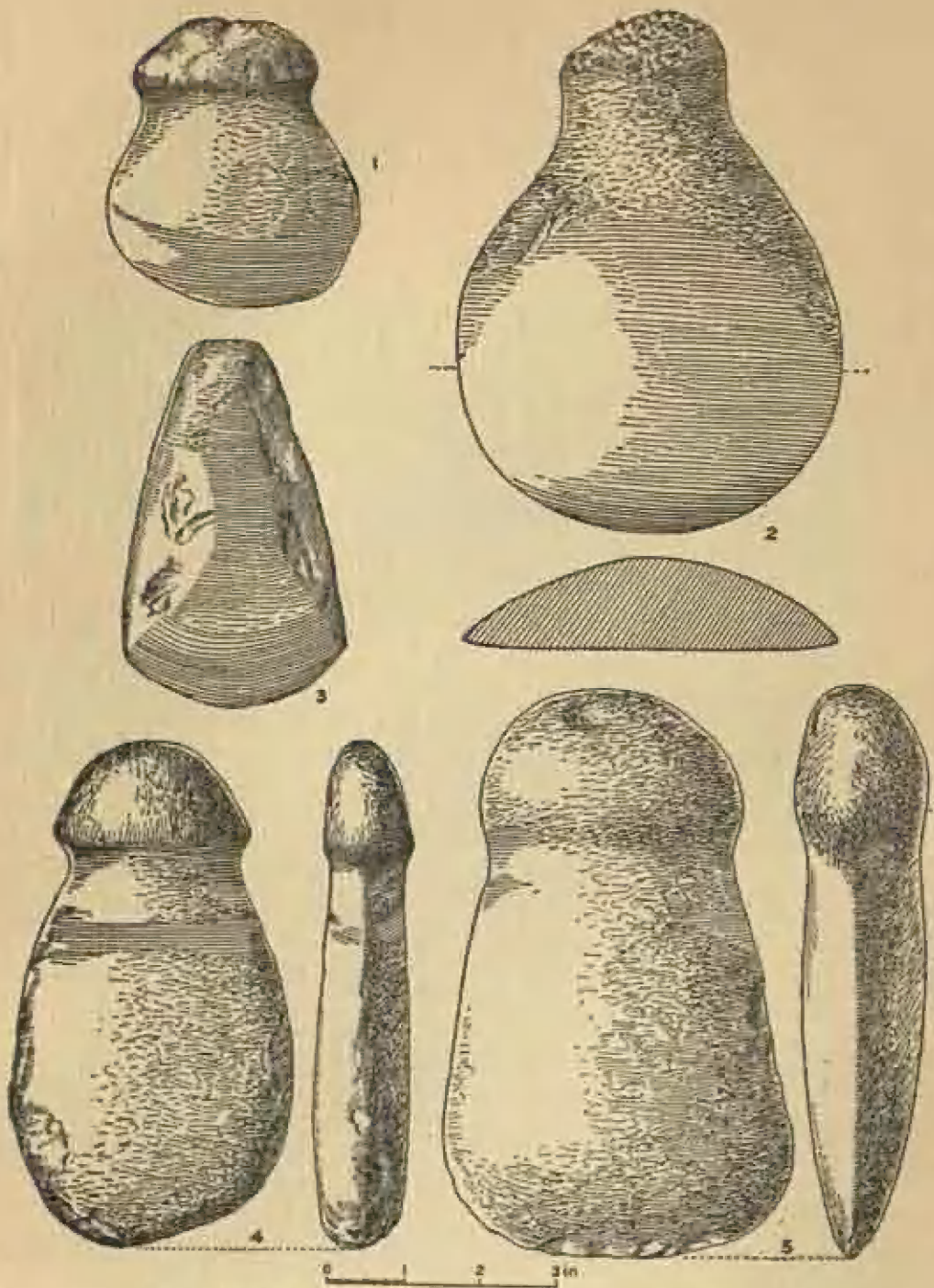


FIG. 5. STONE IMPLEMENTS FROM WADI HAWA (1, 3, 4, 5) AND NUKHEILA (2)

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or only a regular halting-place. If the masses of broken pots were used as a water-dump, it might only be the latter, but the other relics and above all the advantages of the site on the banks of this broad valley with its good grazing and abundant game, point to the former. The Wadi Hawa is destitute of wells now, but water could probably be found at a fair depth.

4. ZOLAT EL HAMMAD. This group of rock-pictures had been reported by the Arabs for several years, but had not been seen by a white man, till I visited it in 1923. The long ridge of Zolat el Hammad lies in lat. $17^{\circ} 50'$, long. $26^{\circ} 50'$, about thirty miles north of the Wadi Hawa, and the pictures (plates I, II, and III) are cut on boulders on a steep hill-side near a clump of bushes and trees called Waara el Gilud ('The coppice of the Skins'), because the Howawir discovered the pictures in 1917, when skinning slaughtered game here. A number of these pictures are shown on plates V and VI in *S. N. and R.*, vol. VII, no. 1. But when Shaw and I revisited them on our 1927 expedition, we examined them more carefully and discovered a fresh group and Shaw took more photographs. They are all incised on boulders as at Um Tasawir, and are identical in technique and similar in subject. There are represented tailed phallic and plumed men, elephants, giraffe, ostriches, oryx, cattle innumerable, dogs, and several other animals difficult to determine, but possibly including monkeys, addax, rock-rabbits and a lion. There were no camels.

Ostriches, addax, oryx, rock-rabbits and a species of lion¹⁰ exist at present in these deserts. Giraffe were found in northern Kordofan in the last century, as native tradition and Arab place-names testify. The elephants were quite distinctly drawn (see fig. 4) and in this remote desert recall Swift's lines:—

Geographers in Afric's maps
With savage pictures filled the gaps
And o'er unhabitable downs
Placed elephants for want of towns.

It is curious that on several medieval maps elephants are drawn in on the blank spaces of the south Libyan Desert. Unless we imagine a total change of climate, it is inconceivable that the trumpeting of elephants could ever have resounded among these sterile hills. But the elephant was known in coastal North Africa in pre-Christian times

¹⁰ No specimen has been killed by a European. The last lion in Tunisia was shot in 1891. Lions were tamed by the Dynastic Egyptians.

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and disappeared with the Roman conquest of Numidia. There were elephants in Dongola in the first century B.C. and they lingered in the high Atlas of Morocco until the Arab invasion.

The pictures were all more or less weathered. In most the outline only was incised, but in a few the whole body was cut out. The drawings were mostly from twelve to eighteen inches long, but some giraffes had necks two feet long.

The hunting dogs were spirited drawings (see plate III), and are of peculiar interest. There is a good deal of dog folk-lore in the Libyan Desert. Pliny tells how a deposed king of the Garamantes regained his throne with the help of an army of dogs. He also mentions a tribe called the Ptoenphac—who must be the Ptoenphanac placed by Ptolemy in this very area—who had a dog for a king and divined his commands from his movements.

Going further back into dynastic times, we find that the Libyans used hunting dogs as do the nomads of North Africa today. On a stele of Antef II, who was an Egyptian Nimrod, we find the names of five of his hounds, of which two are Libyan, Bakar and Takar. This second name recalls Jebel Tageru, mentioned above, Tekro well between Kufara and Tibesti, and the Tekhro peak in Jebel Meidob.

Zolat el Hammad is only a day's march south of the oasis and salt-pans of Bir Natrun, which was the northern limit of my 1923 expedition. There are no antiquities at Bir Natrun, which has been visited by about half a dozen Englishmen, of whom the first was W. G. Browne in 1793.

In November and December 1927 W. B. K. Shaw and I carried out a long cherished project to visit Nukheila oasis, 65 miles north-west of Bir Natrun, and to explore the unknown desert which lay between it and Selima to the west of the Darb el Arbain, the famous 'Forty Days' road from Assiut to El Fasher.

We covered no new ground between El Obeid and Bir Natrun (467 miles) but revisited, as mentioned above, the sites at Wadi Hawa and Zolat el Hammad.

On 25 November 1927, we left Bir Natrun with a caravan of about thirty men and forty camels and in two and a half days reached Nukheila. We were not the first civilized travellers to penetrate to it as Prince Kemal el Din Hussein and Dr. John Ball, Director of Desert Surveys, Egypt, had reached it from the west early in 1925, with a column of Citroen cars. No full account of their expedition has yet

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been published, but we had seen Dr. Ball and learnt that while they had found stone implements, and fragments of grindstones in many places on the open desert during their exploration from Terfawi to Owenat, Owenat to Erdi, and Erdi to Nukheila, they had found no antiquities in Nukheila oasis itself. This was disconcerting as I had tentatively marked down the route of the invading Libyans from Cyrenaica and Fezzan to Kordofan, as Kufara-Owenat-Nukheila-Bir Natrun-Zolat-el Hammad-Jebel Tageru. However, we hoped that a more thorough examination of the oasis would reveal something.

Our hopes were fulfilled as we found three groups of rock-pictures and an ancient site like those at Wadi Hawa. These all lay to the north-east of the oasis, in an area not visited by the Prince and Dr Ball.

The sites were as follows :—

(a) 10½ miles north-north-east of Nukheila lake is a small conical hill about 20 feet high, composed of weathered sandstone standing among a group of similar hills in a tiny depression. Pictures were found incised on the lee (south-west) side of this hill, showing men, cattle, giraffes and other animals. There was one interesting drawing of a giraffe with a curiously curved neck and horns curving wrongly backwards. It looked a later work and had had four lines cut across the neck as though to show it was a mistake. Perhaps it was the work of an imitator. The human figures were purely conventional and resembled those at Um Tasawir. The cattle and giraffes are clearly of the same school as Um Tasawir and Zolat el Hammad. Some of the cattle were picked out in chess-board squares, which was common at Zolat el Hammad. The general style was rather crude. The drawings were from six to eighteen inches long.

(b) A small group of about ten drawings was found incised on some rocks on the west face of a bluff one and a half miles south of Tamar el Gusar, overlooking Wadi Hussein. They were mainly of cattle, some picked out in squares. Several were almost eroded away.

(c) A bigger and more interesting group of pictures was found incised on the rocky sides of three sandstone hills about three miles north of (b). Some are cut in positions now almost inaccessible owing to falls of rock. The majority are on a small hill shaped like a sphinx, and include a row of coloured pictures on the south-east side, on a concave surface about thirty-five feet from the ground and visible from the foot of the hill. They show a procession of cattle and the colouring is apparently from rubbing with friable red sandstone. The other

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animals shown are giraffes (see plate VIII, fig. 2),—two of which are noteworthy for the faithful representation of the protuberant chest,—addax, oryx, and other antelopes (?). Altogether there were over a hundred pictures, many much weathered.

There was also a group of three pictures cut much more recently, as they showed fresh white weathering, probably the work of Guraan raiders from the west. They included very bad drawings of a sheep and an addax.

(d) A prehistoric site was found by Shaw in a water-bearing depression which we named Wadi el Anag in long. $19^{\circ} 50'$, lat. $26^{\circ} 50'$, about twenty miles north-east of Nukheila lake; it is very like the Wadi

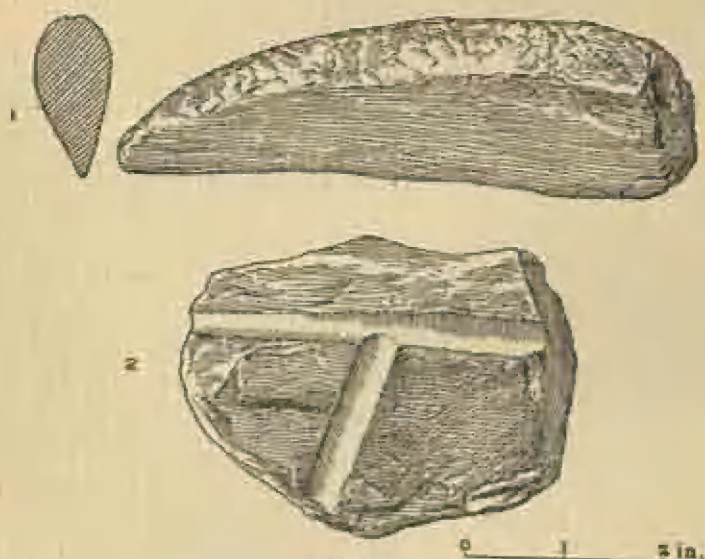


FIG. 6

Hawa sites. There were the usual grindstones, pestles, broken pottery, ostrich egg-shells, a grooved sandstone polisher for arrows or bone implements (fig. 6, no 2), and another of the green axeheads. On a hill above the site were two crude rock-pictures of the type described above.

This site is of importance as establishing the northern origin of the Wadi Hawa objects. The grooved sandstone polisher was similar to one which we had picked up about three weeks previously at El Jihaf (lat. $16^{\circ} 41'$, east side of Jebel Tageru), and which had four narrow grooves. The axehead was of the same type and rock as those mentioned

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above. It seems clear that here lived the artists of the rock-pictures described in (a), (b), and (c).

Four miles north of (d) we found a large number of sandstone pestles on the north side of the floor of Wadi Hussein; and one march further on, at a point some thirty-five miles north-north-east of Nukheila lake, on the open desert, we found another stone axehead (fig. 5, no. 2) lying half-buried in the sand. It was of the same green rock as the others, but was of far better workmanship with a smooth ground surface and perfect rounded edge. It weighs $2\frac{1}{4}$ lbs., and is nearly seven inches long. One side is flat and the other convex. It should not be called an axehead, strictly speaking, as it was probably a hoe, gripped in the hand.

This exhausts the list of antiquities which we found at Nukheila and its environs. It is probable that a closer search would reveal more dwelling sites and rock-pictures, especially to the north-west.

Between Wadi el Anag, which is the last outlying oasis of the Nukheila depression, and Selima oasis—our objective west of Halfa—stretch 240 miles of utterly unknown desert. We had planned to cut across it in a great curve to the west, extending the distance to 275 miles in order to pass through the area in which the 'lost' oasis of Zerkura is supposed to lie. This legendary place has figured for over a century in Arab oral tradition, and is mentioned in a native manuscript ascribed to the fifteenth century. Lack of space forbids my detailing the evidence, which is voluminous but vague.¹¹ We did not find Zerkura, but I still believe it may exist about long. $27^{\circ} 15'$, lat. $21^{\circ} 30'$.

The country between Nukheila and Selima is waterless and featureless. For ten days our caravan plodded over the most forbidding desert I have ever seen. There were no hills of any size. Long stretches of flat disc-like desert, with its sandy surface unbroken by a bush or a blade of grass or a pebble, alternated with successions of little broken rocky ridges. It was a blank upon the maps and equally unknown to the Arabs. We marched entirely on compass bearings and carried a theodolite.

The only sign of life was an occasional skeleton of a migrant bird. Never was there a piece of the world's surface less promising for archaeology. It seemed inconceivable that any human being in any

¹¹ See W. J. Harding King's *Mysteries of the Libyan Desert*, 1925, pp. 51-4 and Dr J. Ball's 'Problems of the Libyan Desert', *Geographical Journal* July, Aug., Sept., 1927, and appendix 9 to my forthcoming article in *S. N. and R.*, vol. xi, no. 2.

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age could have set foot in this amazing wilderness, and yet on the fifth day out of Wadi el Anag, at the end of a heartbreaking march of twenty-one miles over hard drift sand, we came on a prominent solitary rock, 165 miles north-north-east of Nukheila lake, and 125 miles west of Selima oasis, in lat. $20^{\circ}56'$, long. $27^{\circ}40'$. It was composed of hard sandstone and, though only rising some twenty-five feet above the plain, was visible from eight miles away. On one of its sides Shaw discovered a solitary rock picture of an ox (plate VIII, fig. 1) and I picked up a pestle and some ostrich egg-shells, sure signs of ancient occupation. We named this rock Burg el Tiyur, 'Tower of the Birds', because it was littered with scores of skeletons of migrating birds, obviously casualties from a regular migrant stream across the Libyan Desert.

Burg el Tiyur lies almost on a straight line drawn between Bir Terfawi and Nukheila. Native reports speak of a former road between these places; it is 300 waterless miles, but it is a possible route, and Burg el Tiyur would be a natural landmark under which to halt. We can only surmise that the rock-picture was drawn by a casual traveller. There is no water nearer than Lagia wells 85 miles to the south-east. The picture is of the same type and probably same early date as those at Nukheila.

From Burg el Tiyur, which was approximately the furthest point we reached in the unknown desert, we turned east and marched to Selima, which we reached in four and a half more days over barren desert. About fifteen miles south-south-west of Selima, I found another stone pestle. Comyn in 1908 mentions the discovery of a grindstone forty miles west of Selima, and found a human jawbone further west still.

On 16 December 1928, we reached Selima oasis, and spent three days there. It is a well-known station on the famous Forty Days' Road and has been visited by a number of explorers and archaeologists between the seventeenth century and today. Its only antiquities are (a) the so-called 'convent', which is an alleged early Christian stone building of seven rooms or cells, in a fair state of preservation, and (b) a large number of marks and signs cut on the masonry blocks of the convent itself and also on the natural rock platform on which it is built.

The latter, a few of which are illustrated in figure 7, are interesting even if only from their puzzling nature. It is easy to see, not only from the Arabic date A.H. 1321 (= A.D. 1902), but also from the weathering, that some are quite modern. Others are probably older, but the majority, if not all, are Islamic, as the name Allah occurs continually.

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Some may be medieval. They are very numerous and include three undoubted Cufic inscriptions, some modern Arabic writing, and a number of designs, some possibly cabalistic, but most probably tribal marks or camel brands. It is impossible to disentangle and date them all, but it is obvious that there has been continuous engraving and scrawling on the stones from at least the early Middle Ages till today. A few resemble the Tifinagh writing of the Tuareg, others look like conventional figures of men, while some resemble well-known camel brands, which have been in use for centuries, notably the *Rigl el*

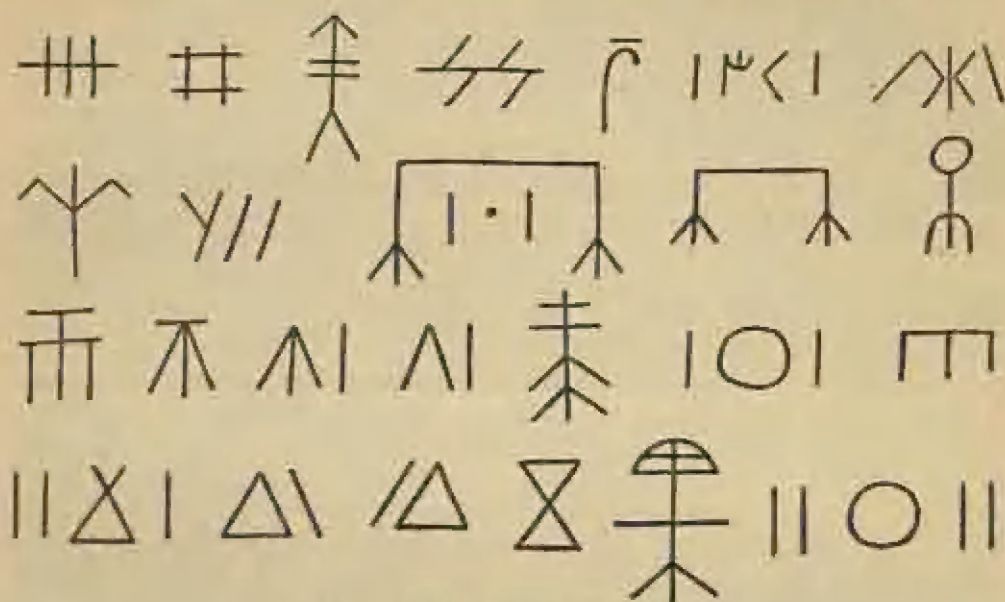


FIG 7. ROCK-CUT DESIGNS AT SELIMA

Ghorab, or Crow's Foot, used by the Fezara section of the Nuba of Jebel Haraza, Kordofan, by the Tunjar of Darfur and Wadi, and by the Orfella of Tripoli.

Several of the marks, which are very numerous, can be paralleled among (i) those found scratched on rocks in Tripoli by the Beechey brothers over a century ago, and (ii) the rock scorings found on the Gubari road between Kharga and Dakhla oasis and published by Mr Harding King. These include, beside drawings of camels, horses, ostriches, men and even boats, a mass of designs and geometrical figures.

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It may be mentioned here that we had found a few rather similar designs, but including also some rough drawings of the rayed sun, on a small much weathered rock on the south-west side of the lake at Nukheila. They may have been just modern scratching by Guraan raiders and I believe some are not unlike the Guraan camel brands. They are however too few and too faint to merit more than conjecture.

These, then, were the archaeological finds of my 1923 journey and Shaw's and my 1927 expedition. They help to establish some of the links in the Libyan archaeological chain, especially if considered in conjunction with other discoveries both to north and south.

South of lat. 15°45', that is south of the Abu Sofian sites, northern Kordofan and northern Darfur are full of archaeological remains. But here the desert is gone and there are rolling grassy plains with valleys full of trees and a fair rainfall. It is probably in these latitudes that the Tamahu or Southern Libyans first encountered the black aborigines in the third millennium B.C. The resulting fusion produced the Leucoaethiopes or Nuba. There were moreover cross-currents of migration from east to west. An ethnic tangle was created which makes it impossible to draw any definite archaeological conclusions from finds in this area.

The actual remains consist of rock-pictures, innumerable stone burial-cairns, some burnt-brick remains, ancient walled enclosures, relics of iron-smelting (much of this, however, is recent), and stone implements and stone rings. To these must be added a number of Berber place-names.

The rock-pictures of north Kordofan have been described by MacMichael.¹² They occur at Jebel Haraza, and at Jebel el Afarit. The Haraza pictures are divided by MacMichael into three groups. The first, at Jebel Shalashi, are spirited and highly finished paintings of horsemen, giraffes, hyenas, gazelle, and cattle; some thirty are in red and some half dozen in white pigment, none are graven. There are no camels. There is one white picture superimposed over red, and one of an animal making water. The second group is at Jebel Karshul, and are also paintings in red pigment on the face of an overhanging rock in a cave. Many are now indecipherable probably owing to rain. Men, horses and camels are portrayed. The workmanship is much inferior

¹² H. C. MacMichael, 'Rock Pictures in Northern Kordofan', *J.R.A.I.* xxxix (1909), 563.

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to Shalashi. This group, says MacMichael, 'almost exactly correspond to the common "Libyo-Berber" rock-pictures found over the greater part of North Africa and the Tawarek country and described e.g. by Mr Flamand in *L'Anthropologie*, vol. viii, 1897 (Notes sur deux pierres écrites provenant d'El Hadj Mimoun, région de Figuig)'. The third group are very crude drawings of camels and mounted men chipped on small granite boulders lying in drift sand.

In 1922 I found a fresh group at Haraza on an undercut weathered boulder at Gelti el Naga on the south-east of Jebel Belbeldi. There were sixteen figures in red pigment, showing camels and conventional men. The pictures at Jebel el Afarit are in blue-black pigment and show mounted men and men with shields. There are no camels. The workmanship is poor. Jebel Haraza is rich in stone grave-cairns, ancient wells, and relics of iron-smelting. A native manuscript on the Sudan¹³ states that Jebel Haraza, which the author calls Jebel Abd el Hadi, was the capital of the Nuba Kingdom in the time of King Taharka (663-658 B.C.)

It is difficult to say how far these Kordofan rock-pictures or any group of them are of the same school as those I discovered further north. They must however be of Libyan origin, although the artists may not have been the tribesmen passing south past Bir Natrun and Tageru, but invaders coming eastwards through Wadai and Darfur. The greater preponderance of horses is significant. But the mixture of Libyan, Nubian and negro and later Arab, in this pasture belt studded with hills lying between Abeshir and Khartum is so confusing that it would be unwise to attempt more than description of sites. It is to be hoped that proper excavation will be undertaken at Jebel Haraza and the brick village of Jebel Zankor.

We turn with relief to the rock-pictures found by Ahmed Bey Hassanein at Owenat, in 1923, and revisited in the winter of 1924-5 and in 1926 by Prince Kemal el Din Hussein, who discovered more groups. They are fully described by the Abbé Breuil in a recent article¹⁴. Unfortunately the reproductions (which consist of eighteen photographs) are so small and poor that it is difficult to follow intelligently the admirable description of the different subjects by the Abbé.

¹³ Numbered D4 in MacMichael's *History of the Arabs of the Sudan*. The title is 'A compendium of the History and Geography of El Nubā' and the author one Daud Kubara ibn Suleiman.

¹⁴ 'Les Gravures Rupestres du Djebel Owenat', *Revue Scientifique*, 25 Feb. 1928.

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Jebel Owenat is a mountain mass of 1500 square kilometres situated in the heart of the Libyan Desert at the intersection of lat. 22° and long. 25°. It rises to a height of 6132 feet above sea-level and geologically is an igneous island in a sea of Nubian sandstone. It has a fair water-supply in the shape of eight known rock-wells apparently fed by rain. The main vegetation is acacia, tamarisk and *had* grass. All the pictures are engraved on the sides of valleys or *karkurs* cutting into the hillside. The best group were found by Hassanein in the Karkur Talh. There is a good photograph of some of these on p. 204 of his *Lost Oases*. Other groups were discovered by Prince Kemal el Din in Karkur Ibrahim and Karkur Hamid.

The pictures show men and women, giraffes, ostriches, antelopes, cattle, horses, wild sheep, dogs (or jackals?), a hippopotamus or rhinoceros, and some crabs (?). Bows, spears and shields figure. One man is ithyphallic; another wears a short tunic; several are shown horned or plumed.

There are two figures of camels, which from the fresh appearance of the incisions are obviously quite recent and can therefore be ignored. A third, however, 'semble trop patiné pour être récent', (Breuil's fig. 61). Patination is an unsafe guide. This camel may well be early medieval. Anyhow it is only a solitary specimen and, generally speaking, the Owenat pictures must belong to the pre-camel era, that is before 100 B.C.

Abbé Breuil divides them into various age-groups. Some he attributes to the hunters of the upper palaeolithic age, especially the very realistic giraffes and ostriches. They are of the same style as the best Bushman drawings in South Africa. Some, especially the camels and perhaps the few dogs, he believes are modern. The remainder, a large number, are of one school, but can be subdivided into two groups; one better-drawn and usually 'pecked', which Breuil calls *v*^a, the other, *v*^b, more conventional and incised on outline. They have many analogies, the former group with Egyptian designs, especially pre-dynastic, and the latter with the rock-pictures of the French Sahara. They would probably therefore date from the fifth millennium B.C. as far perhaps as the first millennium B.C.

Breuil compares *v*^b with the pictures at Um Tasawir and Zolat el Hammad, only two of which recall to him *v*^a. The big-horned *Bos africanus* of proto-dynastic and Old Empire times is the commonest type of cattle represented at the three sites. It was replaced in the Middle Empire by *Bos brachyceros*. Owenat *v*^a has only *Bos africanus*, but *v*^b has both.

ROCK-PICTURES IN THE LIBYAN DESERT

As far as I know, none of the drawings discovered on either of my expeditions are of the realistic Bushman school. This style is unmistakable.¹⁶ Abbé Breuil has assured me that there is no question but that his group 1 of Owenat belongs to it. It is generally supposed that the Bushmen came from the north and it is held that they were sprung from the Grimaldi negroids of palaeolithic times, who crossed to Algeria and found their way south by degrees. It is a far cry from Mentone to the Cape, but we know of other early culture-drifts of comparable distance. Alternatively there may have been an artistic negroid community in the Sahara in palaeolithic times, whose art spread both north and south.

I have dealt with the Owenat drawings at some length as this mountain mass is a key-region in Libyo-Sudanese archaeology.

Other finds of rock-pictures which should be considered in conjunction with Owenat and the discoveries of Shaw and myself, are:—

(1) Jebel Guroguro (long. 19°, lat. 17° 45'); rock-pictures reported to me by Arabs in 1922. No European has seen them. They include a series of mounted men.

(2) Yarda oasis, Borku (long. 19°, lat. 18° 40'); rock-pictures representing horses, camels, dogs, ostriches, and hippopotami; discovered by Col. Tilho about 12–15 years ago.¹⁸ They are very similar to those at Qalaat el Wish.

(3) The Grotto of In-Ezzan, a few miles north of the Tropic of Cancer and east of long. 10. Rock-pictures, none incised, some done with ochre, others with a white paint, in good preservation. Discovered first in 1923.¹⁷ This is a very interesting site. There are resemblances to very early Spanish paintings *e.g.* Cogul, Alpera, Minateda, to pre-dynastic Egyptian art, and to Bushman paintings. There are also some medieval and recent drawings and inscriptions in Arabic and Tifinagh. Its geographical position, almost at the Western terminus of the great east-west caravan route of the early Middle Ages from the Nile to the Fezzan, is of peculiar interest and it provides a useful link between the Sahara and the Libyan Desert.

¹⁶ Excellent reproductions are given in Miss Helen Tongue's *Bushman Paintings*, 1909.

¹⁷ Tilho, 'The Exploration of Tibesti, etc., 1912–1917'. *G. J.* lvi (1920), p. 258 and photograph p. 88.

¹⁸ Description by H. Breuil in *L'Anthropologie*, xxxvi (1926), p. 409. Notice in *ANTIQUITY*, I, p. 353–5.

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(4) Abu Ballas, or Pottery Hill, mentioned above. Three striking rock-pictures,¹⁸ one of a tall man in profile, 'de style nettement égyptien dynastique'; the second of a bearded Libyan hunter chasing an antelope with a bow and handful of arrows, and a hunting dog: 'on peut sans doute rapprocher cet archer des figurations de Lybiens des plaques de schiste égyptiennes protodynastiques'. The third is a cow (*Bos africanus*) suckling a calf. All three are probably contemporary.

There were also found a large number of designs scratched on the jars here. They are, according to Prince Kemal el Din, clearly tribal marks, probably medieval, of Guraan and other Tibbu raiders. But some of the jars, especially the ovoid specimens, may go back to dynastic times.

(5) The rock-pictures of Aïr, some of which are described and illustrated by F. R. Rodd in his book on the Tuareg, *The People of the Veil*. It is clear that more exploration is needed here and to the north-east, in order to link up with Nachtigal's work in Tibesti.

(6) The whole corpus of Algerian drawings collected in Frobenius and Obermaier's monumental *Hadschra Maktuba* (Munich, 1925). The group which bears most resemblance to the pictures at Nukheila, Um Tasawir, and Zolat el Hammad, is that at Thiyut, 15 kilom. ENE of Ain Sefra, first discovered in 1847. Here are men with shields, a plumed archer, hunters with dogs, cattle, antelopes, ostriches, lions, and an elephant. Although the bulk of Algerian and Saharan rock-pictures probably range from slightly pre-Roman to early medieval times, there is left a scattered residuum of examples—some portraying extinct animals e.g. *Bos bubalus*, some showing dynastic Egyptian influence, e.g. the crowned ram of Abu Alem—which must be assigned to a far earlier date. If we are to accept with all its implications a Bushman attribution for some of the In-Ezzan and Owenat pictures, this date is pushed back to the late palaeolithic age, say at least 12,000–10,000 B.C. In fact it appears that with each succeeding discovery archaeologists antedate the North African rock-pictures more and more. At the same time it must be borne in mind that both in the Tuareg country and in South Africa and probably elsewhere rock-pictures, differing only in subject and not always in technique, are still being made today. Until, however, we can find associated *and* stratified implements or other remains on a rock-picture site, the chronology must remain vague. It

¹⁸ Figured in the article on Owenat in *L'Anthropologie*, and also in 'Les Depots de Jarres du Desert de Lybie', *Revue Scientifique*, 1927. Prince Kemal el Din Hussein and M. L. Franchet.

PLATE II



ROCK PICTURES AT ZOLAT EL HAMMAD
FR. W. B. K. Shaw

facing p. 288

PLATE III



ROCK PICTURES AT ZOLAT EL HAMMAD

PA. W. B. K. Shaw

PLATE IV



BAGS LOADED WITH ROCK-SALT AT DIR NATRUN
PH. W. H. K. SHAW

PLATE V



PART OF OUR CARAVAN ENTERING NUKHULA DEPRESSION, NOVEMBER 1927

(Note the survey-wheel behind)

PA. W. B. H. SHAW

PLATE VI



THE SALT LAKE AT NURIELLA OASIS

(Object in foreground is a sand-dune)

PLATE VI. E. K. SHAW

PLATE VII



OUR CAMP AT SUKHTILA OASIS, NOVEMBER 1927
Ph. W. H. K. Shaw

PLATE VIII

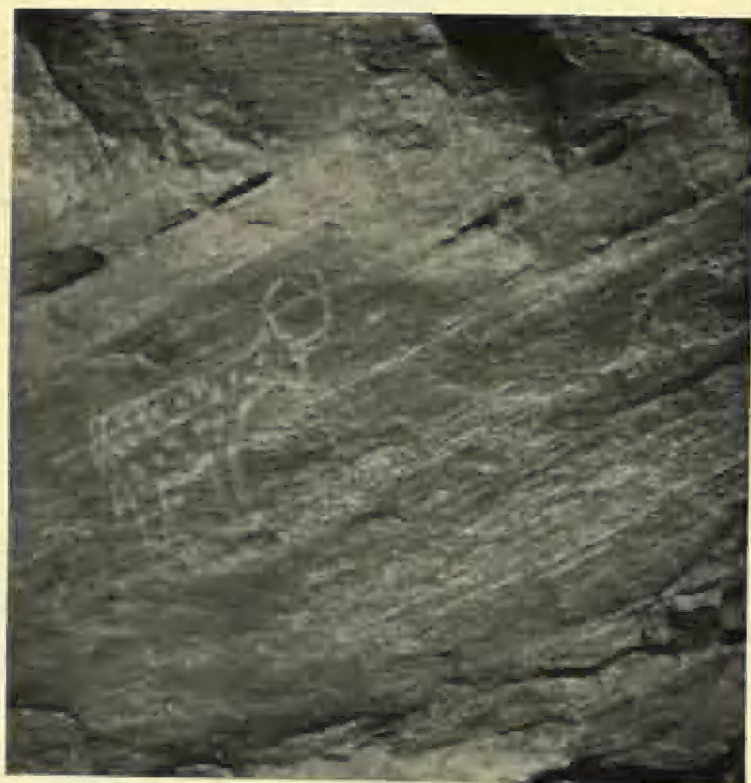


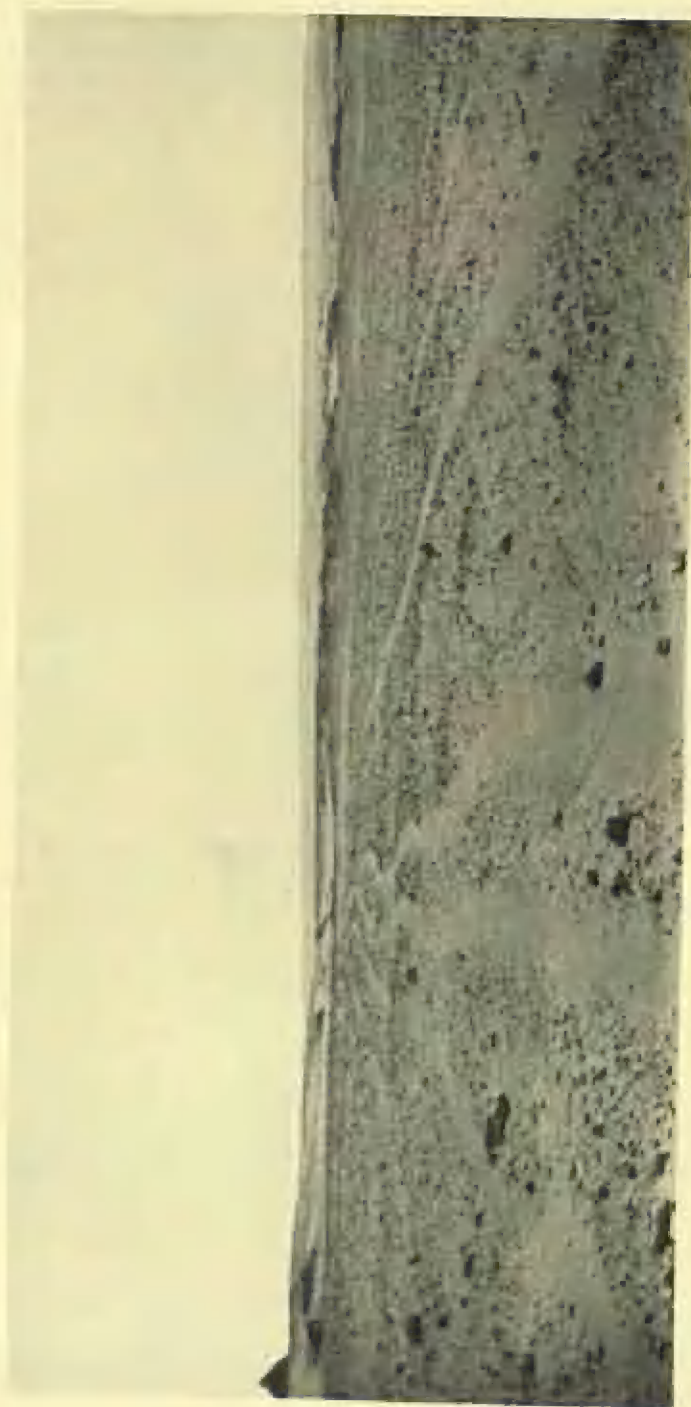
FIG. 1. ROCK-PICTURE AT BURG EL TIVUR.



FIG. 2. ROCK-PICTURES AT TAMAR EL GÛSAR

PH. W. H. R. SHAW

PLATE IX



THE DARB EL ARBAIN, OR FORTY DAYS' ROAD, NORTH OF SELIMA OASIS

PA. W. H. R. SHAW

ROCK-PICTURES IN THE LIBYAN DESERT

will be sufficient at present to classify the Libyan Desert rock-pictures into four rough groups :—

- (a) Bushman ; late palaeolithic or early neolithic.
- (b) Early Libyan, neolithic, pre-dynastic, Old Empire.
- (c) Middle Libyan ; Middle and Late Empire, down to the introduction of the camel into the Sudan, *i.e.* early Meroitic period.
- (d) Roman, medieval, and modern.

Owenat would be partly (a), mainly (b) and (c) ; Nukheila, Zolat el Hammad, and Um Tasawir (b) and (c) ; Qalaat el Wish and Abu Sofian mainly (d). The Haraza pictures would be—Shalashi (b), Karshul (c) and (d) and Kurkeila (d). Um Afarit probably (c). But these Kordofan groups are at present rather difficult to date.

For the period of (a) we have naturally no written records. For (b) and (c) we have the references to Libyans in the Egyptian monuments. For the latter half of (c) we have the evidence of Greek and Roman geographers and a few vague allusions in native 'Histories'. For (d) we have a mass of data from the same authorities and from the Arabian geographers. Some of these data were given at the beginning of this paper.

It only remains to summarize briefly the evidence of finds of stone implements, etc. Apart from those which Shaw and I discovered and which are described above, implements have been found in the Libyan Desert on the following sites :—

(a) At Owenat, none so far, but I feel convinced that a thorough search on the floors and banks of the several 'karkurs' would reveal some. It would be of great value to establish the provenance of the axeheads, which we can trace from the Wadi Hawa to Nukheila, but not beyond.

(b) Abu Ballas, a large number of worked flints.¹⁹

(c) At various points in the open desert between Terfawi and Owenat, flint and quartzite implements.

(d) At the NE corner of Erdi (lat. $19^{\circ} 34'$, long. $23^{\circ} 38'$); arrow-heads, grindstones, pottery, ostrich egg-shells, and grindstones.

(e) About 50 miles west of Nukheila, a grindstone.

¹⁹ A paper on these and other stone implements, which Prince Kemal el Din found, was read by Père Bouvier de la Pierre early this year before the Institut d'Egypte, but it will not be published till November.

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These discoveries all resulted from the motor expeditions of Prince Kemal el Din and Dr Ball, mainly in 1925.

(f) Hatiyet el Etheila, NE of Kufara. Ancient sites found by Hassanein Bey and Mrs Forbes in 1921, but no relics.

(g) 'Allemkuis' between Dakhla and Regenfeld. Flint flakes 'like the stone knives of Heluan', picked up by Zittel on the Rohlf's expedition of 1874.

In his paper on 'Problems of the Libyan Desert',²⁰ Dr Ball writes:—

'I have been much struck by the wide distribution of stone implements in the desert. I have found them for instance, not only in Siwa Oasis and near the wells of Abu Mungar and Shebb, but also on the plateau between Baharia and Farafra, on the open desert between Terfawi and Owenat, and to the southwest of Owenat near the Anglo-French border. This wide range of occurrence . . . inclines me to think that there is scarcely any part of the Libyan Desert in which stone implements might not be found by an expedition which would make the collection and study of them one of its main objects . . . Grinding-stones, often with a sort of stone rolling-pin, unpolished celts, knives and arrowheads are the principal forms of implements I have met with'.

It only needs, I think, the discovery of a few fresh sites, especially in Tibesti and Kufara²¹ and a more thorough examination of existing sites, especially Owenat, before we can piece together the 'Leucoaethiopian' mosaic with fair accuracy, and unravel the ethnography of the great desert belt between the Mediterranean littoral and central Africa. We know already the broad outlines of the ancient Libyan migrations and we can guess at a good deal of the chronology. But there are still gaps, geographical as well as archaeological, in our knowledge. The Libyan Desert still has secrets to yield up to the explorer. Three areas especially are virgin ground.

Firstly, the vast tracts of unknown country west and south-west of Kufara. Here lie the northern foothills of Tibesti, the oasis of Wau el Namus²² and Wau el Harir, the latter only discovered by Arabs in 1860,²³ the wells of Guerenda, and the Wadi Ko'ur, all four places

²⁰ *G. J.* Sept. 1927, p. 220.

²¹ Especially in Taiserbo, which was probably more anciently inhabited than the other oases.

²² Native information reports here palms, a salt lake, and broken sherds.

²³ Rodd, *People of the Veil*, p. 336, quoting Minutoli's *Tripolitania*.

ROCK-PICTURES IN THE LIBYAN DESERT

unexplored by Europeans and forming likely stepping-stones in ancient times between the Fezzan and Owenat, Nukheila, etc. Here ranged the Garamantes.

Secondly, the triangle Terfawi-Owenat-Nukheila, of which the sides have been traversed, but the centre remains a blank²⁴ on the map. An expedition from Selima to Owenat would cut right across this area and lay, once and for all, the ghost of Zerzura.

Thirdly, the unknown country, reputed to be a sea of dunes,²⁵ directly south of Siwa, and lying between Hassanein's 1921 Zieghen-Jarabub route and Rohlf's 1874 Regensfeld-Siwa route. Several oases are reported in this area, and possibly the corpses of Cambyse's lost army lie under the drift sand.

When these huge stretches of desert have been explored, a true archaeological and ethnographical map could probably be made, by the aid of which we could see clearly far back to the dawn of Libyan history, past the legends of Idrisi and Herodotus, past the captured Tehenu of the Egyptian monuments, past even the neolithic flints and painted elephants and giraffes, to the mists of the Old Stone Age, when the Libyans first came to Africa, 'a period', says Ibn Khaldun, 'so remote that God alone knows the epoch of it'.

²⁴ H. J. L. Beadnell of the Egyptian Survey is, Dr. Ball tells me, digging a well in long. 28°, lat. 22° 14'.

²⁵ A frontier district administration patrol has penetrated to a point at lat. 27° 45', long. 25° 45'. At lat. 28° 48', long. 25° 39' traces of an old caravan route from Kufara to Siwa were found.

In March 1792, W. G. Browne, who later traversed the whole length of the Darb el Arbain, found a well about 40 miles wsw of Siwa, when looking for some reported ruins.

Climate and Migrations

by J. C. CURRY

In separate favoured regions various kinds of men set out to domesticate and master the gifts and forces around them: to 'live well', in the old Greek phrase, under the given conditions of their home, or failing this, to seek and make a new one: in either event, to comply as well as to command; to conquer Nature by observance of her laws.

J. L. MYRES

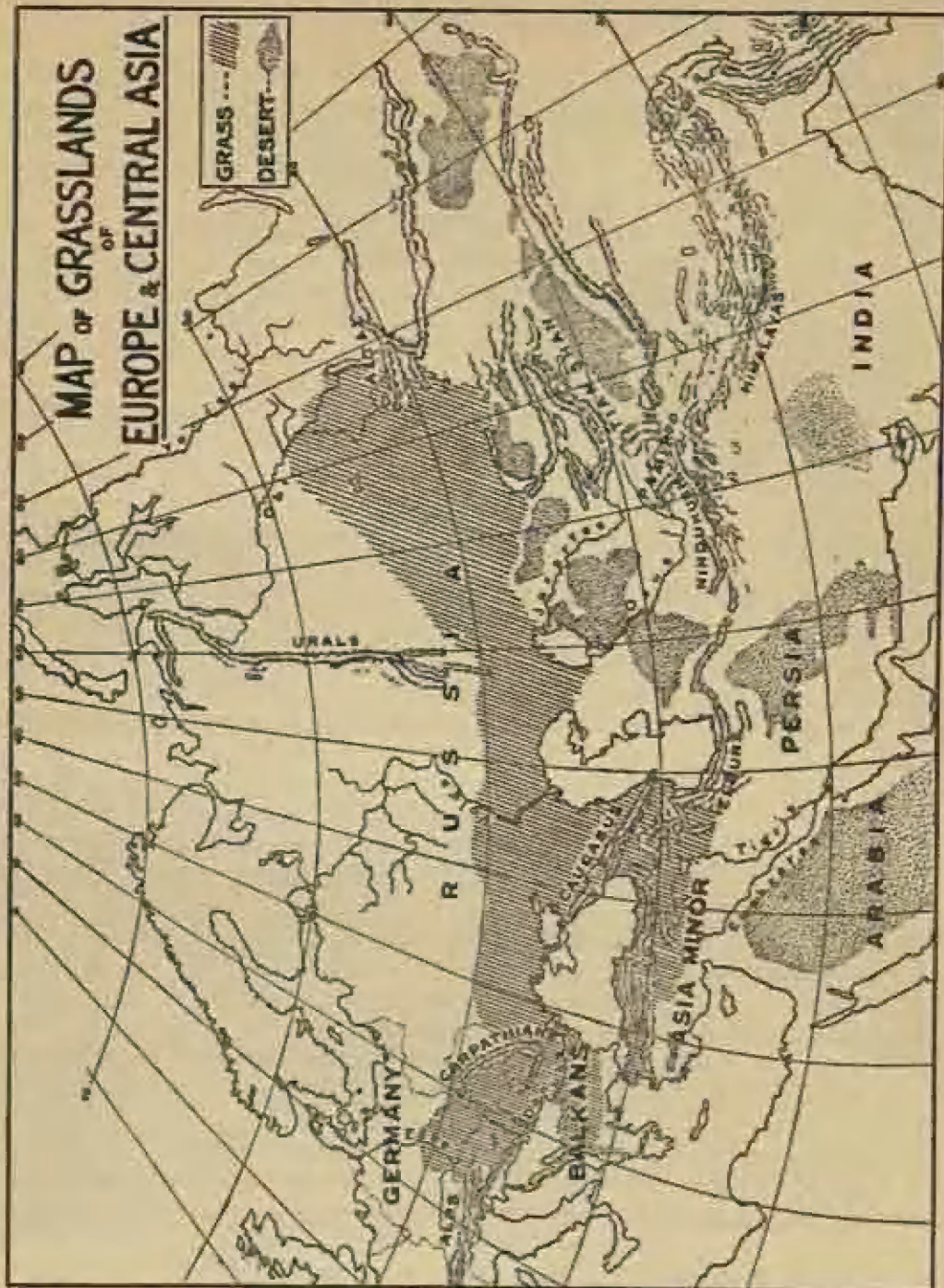
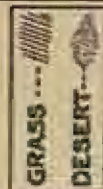
IN this wonderful century when discoveries and inventions have followed fast on one another's heels Man seems to look dazed and half comprehendingly at the works of his own hands. So that there are some who say that he is on the brink of new and more wonderful mastery over Nature; others that there are no more discoveries to make; and others again who wish to cry halt, and ask, hopelessly, for ten years' rest from the innovations and disturbances which scientific inquiry is bringing into their world.

For more than five centuries Man's progress has been almost uninterrupted in every direction. During these centuries Nature has been strangely quiet; and Man has ceased to be frightened of 'portents' and 'visitations'. He has taken advantage of this long quiet period to accumulate knowledge, nearly sufficient, perhaps, to enable him to be the 'master of his destiny', when next Nature rouses herself to such a mood as swept the Roman world into utter ruin. Nearly sufficient, perhaps; but there is still much work to be done before compliance with Nature's laws can be wholly intelligent.

It is only possible here to sketch the main outline of the inquiry, concerning Man and his environment, most relevant to this issue. The sole justification for so crude a sketch is the hope of suggesting new points of departure for others.

In 1903 the Carnegie Institute of Washington appointed Mr Ellsworth Huntington to assist Professor Davies of Harvard University in the physiographic work of an expedition into Central Asia. The results of this and of subsequent expeditions were embodied in an

MAP OF GRASSLANDS OF EUROPE & CENTRAL ASIA



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account published by Mr Huntington in 1907.¹ The great interest of his work lies in his presentment of the evidence concerning the relations between the human race and its physical environment; of that concerning the changes in that environment through changes of climate during historic times; and in his treatment of the subject of the effects of these changes on its history.

Briefly stated his main argument is that there is evidence of the recurrence of changes of climate in Central Asia during historic times, and that some measure of these changes is furnished by the variations in the level of the Caspian Sea. The evidence as to the variations in the climatic conditions of other places in Asia confirms that concerning the variations in the level of the Caspian. He maintains that, while many of the facts might be explained in individual cases by other theories than that of a simultaneous change of climate over a wide area, no other theory explains all the facts. A comparison of physiographic, historical and archaeological data from Russian Turkestan, Chinese Turkestan, Persia, Seistan, Baluchistan and from the area draining into the Caspian Sea shows that all lines of evidence agree in proving that pulsations of climate, corresponding in time and character, have been common to all these countries. The lakes and rivers throughout the whole of this region have waxed and waned simultaneously more than once since the first records of Herodotus. In his time the Caspian stood at a level more than 150 feet higher than it does at the present day. In the time of Alexander it embraced the Sea of Aral, and the Oxus and Jaxartes then entered it. This latter statement is made on the authority of a survey conducted under the orders of Alexander and his generals. To admit the possibility of this it is necessary to suppose that its level was 150 feet higher than it is at present. From the figures given by Strabo (20 A.D.) it is concluded that at that time the level was from 85 to 100 feet higher than now. In his days the trade route from India to Europe led along the banks of the Oxus, and crossed the Caspian to the mouth of the Cyrus river. Four hundred years later the trade route was diverted from the Oxus to Aboskun in the south-east corner of the Sea. About this time the level of the Sea was lower than it is now. Walls were built at Aboskun and at Darbend, on the opposite coast, 'as a bulwark against the migratory Huns'. At the former place the line of the wall can now be traced, below water, at a distance of 18 miles from the shore. At Baku and at other places are

¹ *The Pulse of Asia.*

CLIMATE AND MIGRATIONS

ruins of submerged buildings dating either from the 5th or the 12th centuries. There are several strands at varying heights along the southern shores of the Caspian, among the most clearly marked of which are those 600, 250 and 150 feet above the present level.

Their weak development shows that, as a rule, the Sea did not stand at any one level for a long time. The state of their preservation shows that they are of very recent origin.

The most significant feature of the climatic curve of the Caspian Sea is that it is applicable to the whole of Western and Central Asia. At a distance of 1000 miles to the east in the Tianshan mountains there are remains of irrigation channels at a level where there is now frost in midsummer and so much moisture that, if agriculture were possible under such conditions, irrigation would be unnecessary. Two thousand miles to the west in Armenia, in the lake of Gyoljuk, the stone houses of a village are standing 20 to 30 feet below its surface. Local records indicate that they were built about 500 A.D.

A survey of six distinct basins, viz., Gyoljuk, the Caspian, the Seistan lakes, Lop Nor, Turfan and Kashmir (the latter being south of the Himalayas), proves that a great change took place in the early centuries of the Christian era.

The only hypothesis which will fit all the facts is that of a change of climate in the direction of greater aridity throughout these regions. Except in Kashmir the change brought disaster. Scores of once prosperous oases were abandoned for lack of water. The inhabitants were driven away in waves of migration to confound the civilized world.

A rainfall of 20 inches a year in Australia has been estimated to make it possible to keep 600 sheep to the square mile. A drop to 13 inches reduces the number to 100; and 10 inches is sufficient for only 10 sheep. A gradual decrease of rainfall in the steppes of Asia would naturally lead to migrations of pastoral nomads from the drier regions to those which offered pasturage for their flocks and herds. As the steppes became drier northern and central Europe were, after a long period of blighting cold, becoming warmer and more and more habitable. History records the coming of horde after horde. Nothing could stay them. Rome and Roman civilization fell before them.

Before we can properly estimate the influence of climatic changes upon history, it is necessary to investigate the nature of those changes, both as to duration and origin, as well as to determine the reasons for supposing that climate varies uniformly over wide areas.

Scientists have recognized two chief types of climatic change.

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The first is that of the glacial periods ; the second is that of the 36-year cycle discussed by Bruckner, Clough and others. There is good reason to believe that the latter is applicable to the whole surface of the globe. During a cycle there are two extremes, at one of which the climate of continental regions is to a greater extent cool and wet, with a lower barometric pressure and relatively frequent storms for a series of years ; at the other it is comparatively warm and dry, with higher pressure and fewer storms. These phenomena are most pronounced in mid-continental regions, decline towards the coasts, and are sometimes reversed in maritime regions. The extremes of low temperature follow periods of maximum solar activity as indicated by the number of sun spots and the rapidity with which they are formed. The periods of heaviest rainfall follow those of lowest temperature at intervals of a few years. The other extremes are characterized by diminished solar activity followed by higher temperatures and, a little later, by scarcity of rainfall. The cycles have been traced back by Clough to about 300 A.D., but only the data of the last century can be accepted as approximately accurate. During that time, it may be noted, neither the extremes of heat nor of cold have shown any tendency to increase in intensity.

The Bruckner cycles appear to differ from those of the glacial periods only in degree and regularity. The effects upon glaciers, rivers and lakes are of precisely the same nature ; and the distribution of the two appears to be identical so far as the continents are concerned. Both are world-wide phenomena. The changes of climate which have been discussed above as found by Huntington to have taken place in Central Asia are, he claims, similar in nature to both the Bruckner and the glacial cycles, and lie between them in intensity. In his opinion it is reasonable to suppose that the three types of climatic change are of the same nature, are of the same solar origin, and are of equally wide distribution. This may be true, but he does not adduce sufficient evidence to justify the acceptance of these hypotheses, either as regards the nature or origin of his third type.

From the above précis of the work of Ellsworth Huntington it will be clear that an examination of historical, and perhaps pre-historical, data should yield further results.

Professor Myres, Wykeham Professor of Ancient History at Oxford, in an authoritative sketch of the dawn of History* remarks :

* *The Dawn of History*. Home University Library (Butterworth, reprint 1927), p. 104.

CLIMATE AND MIGRATIONS

'The Arabian desert is one of the earth's great reservoirs of men. Much of it, indeed, is usually uninhabitable; but its surface, gently sloping eastward till it dips into the Persian Gulf, is much more diversified than the Libyan desert by hollows which are moist enough for grass . . . When the supply of moisture is at its maximum, Arabia can therefore breed and support vast masses of pastoral folk, each with its wealth of sheep and goats, its rigid patriarchal society, its ill-defined orbit within which it claims first bite of the grass and first draught from the wells, which it believes its forefathers opened. But if moisture fails, as there seems reason to believe that it does from time to time, in large pulsations of climatic change, man and his flocks must either escape or perish. Fortunately, escape is easy; the tribes are always on the move; and the drought spreads but gradually'.

In connexion with the distribution of the Indo-European languages he says (p. 195):—

'Their wide geographical range, from our own islands to Northern India, and from South Persia to Norway, is nevertheless limited enough to suggest that the whole group stands in somewhat the same relation to the northern grassland, as the Semitic languages to that of Arabia. Though the Indo-European languages differ far more widely from one another than even the most distinct among the Semitic group, they all possess a recognizable type of grammatical structure, and a small stock of words common to them all, for the numerals, family relationships, parts of the body, certain animals and plants . . . It is still generally believed, in spite of much discouraging experience in detail, that from this primitive vocabulary it is possible to discover something of the conditions of life in regions where a common ancestor of all these languages was spoken: and when we find it generally admitted:—(1) that the domestic animals of this "Indo-European home" included the horse, cow, and pig, as well as sheep, goat and dog, and that the cow was the most honoured of all; (2) that these societies, though mainly pastoral, were not nomad, but had homes and some agriculture; that they used both plough and cart, had a considerable list of names for trees, and some experience of the simplest forms of trade; (3) that the social structure was patriarchal, and that the patriarchal households lived in large loosely federated groups under elected chiefs;—we are probably not far wrong in regarding the first users of this type of speech as having inhabited some part, perhaps many contiguous parts, of the parkland country which fringes these

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steppes, and as having spread in a long period of slow development; accelerated from time to time by drought, and migrations caused by drought. Some drifted in moister periods in the direction of the treeless steppe, losing or confusing their vocabulary for forestry and farming; others, in dry spells, further into the forests, with corresponding forgetfulness of their more pastoral habits. Much recent controversy over details would have been avoided if it had been realized earlier by students of these languages that the geographical régime of all grassland regions is liable to these periodic changes; and that the immediate effect of such change is either to alter the mode of life of the inhabitants till it suits their new surroundings, or else to drive them out into regions where they still can live in the ancestral way'.

Professor Myres describes the grassland area to which he refers as consisting of two great reservoirs in hour-glass form, fringed by forest or desert, one extending for 1500 miles from the Carpathians to Orenburg, the other for 1000 miles from that point to the high ground of Elburz or of Tianshan. In northern and central Europe where the rainfall is distributed fairly evenly throughout the year grassland gives place to scrubland, and the latter passes into that deciduous forest which once reached without intermission from the Atlantic to beyond the Urals.

Ellsworth Huntington and Professor Myres have thus traced the connexion between changes of climate and certain historical events. The propositions which they have established suggest a detailed analysis of the material dealing with historical events of this type. This analysis yields the following results:—

In the centuries immediately preceding the year 2000 B.C. the first great movement of the steppe peoples foreshadowed the modern world. The Canaanites poured out of Arabia, and the Hyksos, the Shepherd Kings, crossed the mountain ranges through Persia and Palestine into Egypt.² The Hyksos brought the horse. It was previously unknown in Arabia and in Egypt. At this time Egypt, the Aegean, Mesopotamia and southern Arabia were the centres of civilization.

Tartar nomads must have inhabited the steppes of Europe and Asia, and early users of the 'Indo-European' speech the surrounding forest and parklands of the two continents. The Alpine race occupied

² The so-called Median Wall (from the Euphrates to the Tigris) was probably built at this period. Prof. Myres states that it is certainly older than the Median conquest, and that its object clearly was to keep out nomads.

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the mountain-zone from the Western Alps to the Pamirs; and the Mediterranean race, described by Professor Sergi, the shores of that sea. The Caspian Sea and all the lakes and marshes of Europe and Asia were larger than they are now, glaciers were more numerous and extended further into the valleys. The rainfall was generally heavier, and regions now steppe were then forest-clad, while some tracts which are now desert provided good pasturage.

The next great movement was one of agricultural as well as of nomadic peoples. Between 1600 and 1300 B.C. the Aramaean nomads from Arabia entered Mesopotamia, the Indo-European agriculturalists entered India and Persia, Indo-Europeans for the first time came into contact with Syria (witness the Tel-el-Amarna correspondence), the Hittites entered Asia Minor, the Achaeans settled in Greece. During this period and actually between 1400 and 1350 B.C., Minoan civilization suffered a devastating blow. It may be suggested that the Iron Age began in the Mediterranean somewhere about the 15th and 14th centuries B.C. It was probably introduced as a result of migrations from Europe north of the mountain-zone.

A third important period of migration is dated between 1000 and 600 B.C. During these centuries the Celtic movements are traceable along the north of the mountain ranges from the Italian Alps to the shores of the Caspian. The Cimmerian section disturbed by pressure from the Scythians crossed into Asia Minor by Darbend. They or other migratory tribes were responsible for the disappearance of the Hittite state which had been a leading power for several centuries. The Dorians pressed into Greece and caused nearly three centuries of chaos there. The Medes overran Persia.

Shortly after 200 B.C. a fourth period of disturbance and migration began, when a tribe of nomads (probably Turki by race) known to the Chinese as the Hiung-nu, defeated the Yueh-chi who occupied the province of Kan-suh. The Yueh-chi in turn attacked and dispossessed the Saka, or Scythians, who then occupied the steppes north of the Jaxartes. The Yueh-chi began to settle in Bactria about 70 B.C., and the Saka passed on into India and settled in the Punjab, Kathiawar, and Gujerat. At the same time Persia was overrun by nomadic Turanians. Towards the end of the second century B.C. Germanic hordes threatened Gaul and Italy. Their advance was only stemmed, after special exertions, by the organized might of the Roman arms.

A fifth period, involving a most serious check to the growth of civilization south of the mountain zone, falls between 250 and 650 A.D.

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About 250 A.D. a series of catastrophes occurred in India, Greece, and Italy. The Kushan kingdoms in northern India and the Andhra dynasty in the south of the Peninsula were extinguished as the result of barbarian migrations. Simultaneously the Goths pressed into Greece and took Athens by storm. Their inroads continued in spite of a crushing defeat in 269 A.D.

All along its frontiers the Roman Empire was hard-pressed during the latter half of the third century. Franks and Alemanni roamed through Gaul, Saxons plundered the coasts. A hundred years later a stream of Huns, separating from that which filled the valley of the Oxus and later overflowed into Persia and India, poured into eastern Europe (about 375 A.D.) driving the Goths to the south of the Danube and displacing the tribes in Germany. The Roman Empire was divided in 395 A.D. The Goths were settled in Moesia about 390 A.D. The Western Empire succumbed to the Germans, who after inundating Gaul, Britain, Spain and the North African Province seized the imperial diadem in 476 A.D. The Hunnish Empire in Europe was broken up about 460 A.D. by fresh swarms of immigrants from Asia.

Almost in the same year the Huns poured into India and overwhelmed the kingdoms of the North. About 456 A.D. the Sassanian dynasty of Persia built the walls at Darbend and at Aboskun (mentioned already as now being below the level of the Caspian) as a defence against the nomads. They were able by this means to avoid their fate for a time, but by 484 A.D. all resistance had ceased.

The sixth and last period is that of the 11th, 12th and 13th centuries, in the first of which the 'wild Magyar horsemen' were restless in Europe. During the 13th century swarm after swarm of Mongols poured into Europe and into India.

The dates marking the duration of the fourth, fifth and sixth of these periods are matters of exact historical record. Those of the first, second and third are fixed less finally by historical evidence, by tradition, and as a result of archaeological investigation in both continents and in Egypt and the Aegean. Each period lasted from about three to nearly four centuries; and the intervening periods were of a similar duration. During the intervening periods civilized and organized states were developed in some or all of the regions south of the mountain zone.

Between the first and second migratory periods the Theban dynasties reorganized Egypt and founded the 'New Empire'. Minoan civilization dominated the Aegean. The Canaanites settled down in

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prosperous communities in Palestine and Syria, and the Assyrian power grew steadily in Mesopotamia.

Between the second and third periods the Aryans developed the Vedic civilization of India, the Hittite state grew up in Asia Minor, Egypt, Judea and Mesopotamia were all prosperous. This was the Achæan age of Homer.

After the third migratory period civilization burst suddenly into full flower along the southern slopes of the mountain chain, in India, in Persia, in Asia Minor, in Greece, and in Italy. In each case it occurred after a fusion of the 'Aryan', or 'Indo-European', races with the earlier inhabitants and in a climate suitable to agriculture and to a 'high stage of development of the Indo-European'.

After the fourth migratory period India, Persia and Greece suffered a relative decline, and Italy was pre-eminently the centre of civilization. The countries north of the mountain zone were beginning to develop under Roman influence.

After the fifth, most disastrous period, modern Europe begins to emerge from the chaos of the Dark Ages. After the sixth and last irruption from the steppes the Renaissance ushers in the present age.

Taking the periods after 600 B.C. as being more precisely dated, it is clear that each complete climatic cycle had an average duration of approximately 640 years. The years 1170 A.D., 530 A.D., and 100 B.C. indicate the crests of the waves of migration and drought. Proceeding further back, if the same figure held good the next three crests would be represented by the years 750 B.C., 1390 B.C., and 2030 B.C.; and these dates accord with the general estimate of the duration of the first three migratory periods as indicated in previous paragraphs. It may therefore be inferred for the present that these dates provide a measuring rod for the history of the 2500 years preceding our era. An attempt has been made to represent the historical movements in graph D on page 302.

NOTE ON GRAPH, PAGE 302.

A.—From Brooks' 'Eurasia', fig. 38 in *Climate through the Ages*.

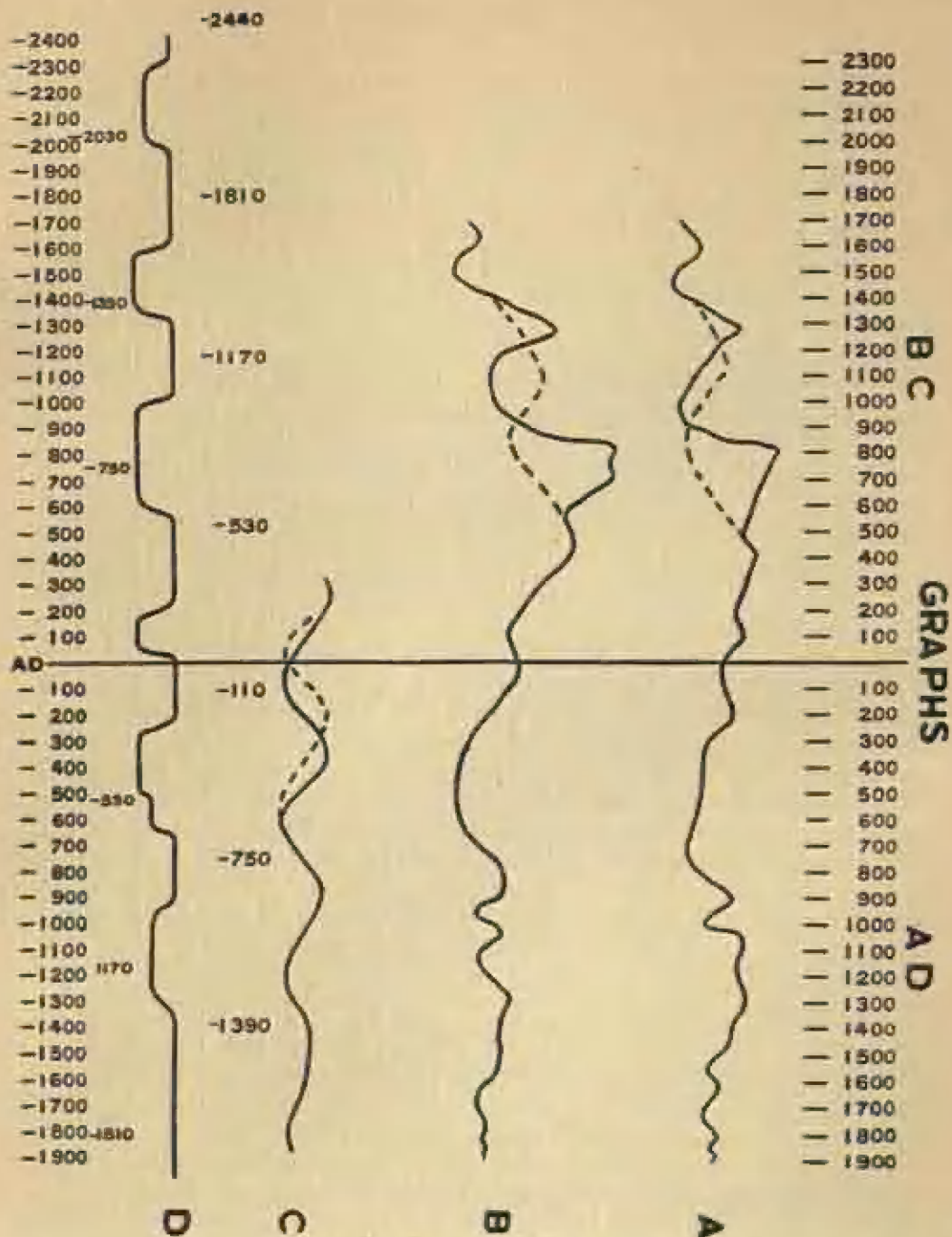
B.—From Brooks' 'Western Asia', fig. 35 in *Climate through the Ages*.

(A and B by permission of the Author and Messrs Ernest Benn Ltd.)

C.—Pearson's graph from the *Geological Magazine*, 1901.

D.—Graph representing historical fluctuations. The 'crest' line represents periods of stability and settlement, and the 'trough' line periods of disturbance and migration.

In A, B, and C the dotted lines are inserted to indicate the divergence of Brooks' and Pearson's graphs from the 640 year cycles.



(For explanation see footnote, page 301)

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An analysis of physiographic and of historical data leads then to the following conclusions:

(1) A regular succession of climatic cycles approximately 640 years in duration, each including on the average something like 300 years of increasing aridity, has produced a series of alternating periods of migration and consolidation in Europe and Asia, where the effects can be traced between the years 2300 B.C. and 1600 A.D.

(2) These periods of migration have also been periods of internal decay in civilized states and among settled communities. This would, *a priori*, be expected to result from unsettled and particularly deteriorating conditions of climate causing deterioration in the agricultural and commercial conditions under which the people of such communities lived.

It may be deduced that the periods of consolidation would necessarily be such that conditions were relatively 'settled' in every respect; that is to say, when at the most very slight variations of climate occurred.

(3) Physiographic conditions generally (of the graph and other evidence relating to the levels of the Caspian Sea) prove that, taking the period of the last 7000 years as a whole, there has been a large-scale but very gradual tendency towards desiccation.

From this it may be inferred that the 300-year periods of migration have been of such a nature that this general primary tendency has been accelerated by secondary conditions, and that the 300-year periods of consolidation have been of such a nature that the corresponding secondary conditions have served more or less closely to counteract this general tendency.

This general tendency is reflected in history by a tendency for the centres of civilization to move gradually away from the equator. Prior to 1000 B.C. conditions were most favourable to physical and intellectual well-being in the region of the 30th degree of latitude (Egypt and Babylonia); from 600 to 300 B.C. between the 35th and 40th degrees (Greece); from 300 B.C. to 400 A.D. between the 40th and 45th degrees (Rome); from 800 to 1000 A.D. between the 45th and 50th degrees (France and Northern Italy); and finally after 1000 A.D. between the 50th and 55th degrees (England, Northern France and Germany). After 400 A.D. no clearly defined distinction can be made. Italy, Spain, France, England and Germany can all claim to have been pre-eminent in different ways at different times: but the general tendency for the best conditions to move northwards is undeniable.

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The year 1840 should have marked a wave-crest of migration, of desiccation, and of a low level of the Caspian Sea. A marked drop in this level did occur about 1820, but it was evidently not connected with any cause sufficient to bring about disaster in the steppes or a very serious economic upheaval. From the generally 'settled' conditions of the last 200 years it follows that either the primary or the secondary cause of desiccation, or both, have ceased to exercise their former influence.

Following Huntington's conclusion that the changes which now appear as 640-year cycles lie mid-way between Bruckner's and the glacial cycles in intensity, the causes of change referred to above as primary must be regarded as being connected with the last glacial cycle.³

The geographical and historical evidence in favour of the existence of a 640-year cycle is inconclusive and incomplete in the absence of any explanation of its cause or causes. The alternating periods of migration and consolidation are, however, so clearly marked that their existence can hardly be a matter of controversy, apart from the question of periodicity. The connexion between droughts and migrations has been recently discussed both by H. Peake and C. E. P. Brooks. Their work shows that there is need for the treatment in greater detail of the historical evidence, both as regards the migrations of the steppe peoples and deterioration in the more highly organized states.

The fact that conditions have been so settled for nearly 600 years, (since the migrations of the Mongol period), has led to these questions being regarded as of academic or even merely 'bookish' interest. It is however possible that changes may occur again on a scale similar to those which destroyed the civilizations of the past. Some such change as that which brought new peoples into Italy, Greece, Asia Minor, Mesopotamia, Persia and India between 1600 B.C. and 1300 B.C. might again take place suddenly and transform the world in the lifetime of our own or the next generation. Such considerations indicate that these questions, being, at least, of potential importance in high politics, deserve greater attention than they have received. If Man is

³ Other evidence bearing on the nature of these primary and secondary causes of change is, possibly, to be found in such facts as that the level of the Caspian was much lower during the fifth drought than it is now: that this drought, judging by the historical evidence, appears to present a triple wave crest: that the fourth and sixth droughts had much less serious effects than the third and fifth: and that the effects of the later droughts were comparatively unimportant in Arabia.

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to be master of his destiny, to 'live well', and 'to conquer Nature by observance of her laws', these are the secrets which he has now to learn.

The problem at this moment seems to offer two main lines of attack—to find the causes of the alternate (300-year) periods of migration and consolidation, and to determine the chronology and causes of the glacial periods. Both solutions are for the present veiled in obscurity.

The conclusions so far reached suggest an examination of all phenomena likely to be related throughout the whole field of scientific inquiry, and primarily in those branches of knowledge classified as geology and meteorology.

In the sciences concerned with the study of past events, in geology, palaeo-climatology and archaeology, as in history, a clear arrangement of the facts is impossible without a standard for the measurement of time. The need for such a standard has long been felt by geologists. Nearly a century ago they sought the aid of the astronomers in an attempt to give definition to geological time. No solution has been found on those lines. In *Climate through the Ages* Brooks elucidates many of the phenomena connected with the great glaciations, but he shows that questions of chronology are still in doubt. One possible factor in the equation, which is still unknown in spite of observations dating from Ptolemy's time, is the variation in the obliquity of the ecliptic. If more were known about the periods, extent and nature of this variation, and its exact relation, if any, to changes of climate, we should be nearer a solution of the questions connected with the passing of the last glaciation, and the progress from palaeolithic to neolithic civilization which accompanied it. Assuming that the 'primary tendency' for civilization to move away from the equator is connected with the glacial cycle, we should be nearer to understanding whether and when the centres of civilization are likely to pass south again.

Similarly it is tempting to hope that the inference of a 640-year cycle may be supplemented by evidence as to its origin. If it were established, it would facilitate the study of future, as well as of archaeological, problems.

Whether this inference of a regular periodicity is true or not, the fact of the occurrence of long periods of drought and disturbance on the one hand, and of climatically and economically 'settled' conditions on the other is susceptible of scientific explanation. The

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problem will be solved eventually, if only because a knowledge of all the factors will make it possible to foresee and provide for future catastrophes.

The main factors as known at present appear to be variations in the position and intensity of the north temperate storm belt and in the direction taken by depressions as they move eastwards across Europe and Asia. According to Brooks it has been found that the area in which annual rainfall variations have a positive correlation extends only a short distance north and south, but for many hundreds of miles across Europe into Asia. This is the area whose rainfall influences the migrations from the Steppes. Ellsworth Huntington has partially established correlation with other parts of the world, but the evidence in that respect is not yet complete. In view of recent work proving, among other things, relations between variations in the Indian monsoon and rainfall in Africa and South America, it seems probable that factors sufficiently powerful to cause the great droughts on the Steppes could not but be world-wide in their effects. Huntington has suggested a gradual northward movement of the storm belt corresponding with, and connected with, the movement of civilization in the same direction.

H. W. Pearson, in the *Geological Magazine*, 1901, suggested that the evidence of the raised beaches proved the existence of a regular cycle of oscillations of sea level. He considered that this cycle had had a period of 640 years in recent times, and one of 500 years about the time of the Christian era. He appears to have connected these oscillations,—perhaps as a guess, for he gives no reasons—with the swing of the magnetic needle. If his theory is correct it would appear to involve the synchronization of increasing glaciation at the poles with scanty rainfall on the Steppes, and vice versa. The evidence has not been fully examined. The position is thus obscure; but the time seems ripe for fresh discoveries.

When so many guesses have been made perhaps one more may be permitted. It is generally felt that there is something lacking in the Darwinian view of the origin (and extinction) of species, and that some simple explanation may have been overlooked. Is this not because the problem is considered as if environment were not constantly changing all over the world? The evidence now under consideration shows that from time to time forest areas become steppe, and steppe areas desert, and vice versa. Where an area of one kind is, as it were, an 'island' surrounded by areas of other kinds, slight

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changes of climate may lead to the extinction within that area of a species, and consequently, where the change of climate persists, to the permanent modification of another species which had partially depended on it for subsistence.

Change and response to change provide the setting of the greatest of all dramas, the drama of Man's ascent towards the crisis where, in virtue of his intellect, he seeks to master those natural forces to which he once attributed divinity.

Geochronology

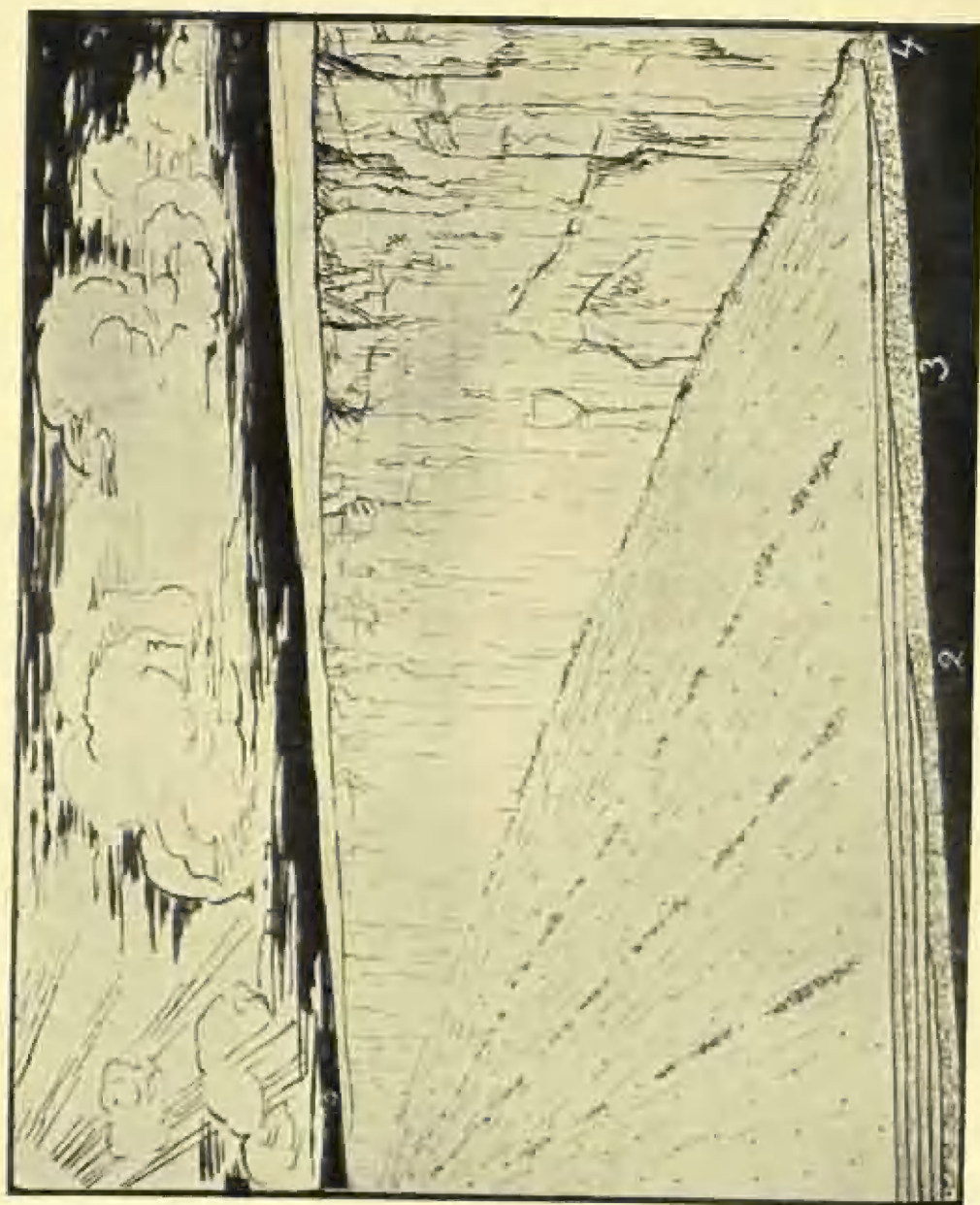
as based on solar radiation, and its relation to archaeology

by GERARD DE GEER

IN the American journal *Science* for 1920 mention was made of my plan for investigating certain laminated clays in North America. During a previous visit to that country in 1891 I had noticed, in several places, laminated clays, similar to late glacial melting sediments in Sweden; these I had found, by long continued investigations, to represent the annual deposit from the melting water along the border of the retreating ice-edge. (Plate 1)¹. With the aid of a graphic method for the comparison of the sharply marked annual layers or *varves*, I had succeeded in identifying such *varves* from one point to another, and ultimately worked out a systematic plan for the elaboration of a continuous time-scale. (See page 309). This was mainly carried out in 1905-6 on the basis of field measurements made with the assistance of a number of able young geologists. During the following year this standard scale was completed at many points. I thus succeeded in tracing, step by step, the recession of the ice-edge and the immediately following progress of the clay *varves* over one region after the other, until the whole line from the south to the centre of Sweden had been traced.

As might be expected, the lowest and oldest clay *varves* were found deposited in the southern extremity of the land, while the great ice-sheet covered the whole of the rest. By following the progress of the clay, step by step, the whole series was built up; thus forming a continuous and exact time-scale for the last recession of the ice through Sweden up to a certain year, when a great ice-dammed lake in central Sweden was drained off, depositing a very thick annual *varve*. This year was chosen as representing the very end of the late Glacial Epoch. (See map on page 311).

¹ Note on plate illustrating clay registration of ice-recession :—Land-ice with steep ice-cliff down to sea bottom, whereon four annual stages of ice-recession are marked by dotted lines; frontal moraines from small winter-stops in the retreat (1-4). Below :—bottom section through the corresponding four annual clay *varves* encroaching one over the other on the stony moraine bed, as it was left every summer by the receding land-ice.



CLAY REGISTRATION OF ICE-RECESSION

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DIAGRAMS FOR FIXING THE ICE-RECESSION

Four *varve*-sections showing ice-recession at Stockholm from S to N during the years 1056 to 1032 before the end of the Ice Age, *i.e.* about 9,800 years ago.

In order to compare *varve* series from different localities and thus to compose a chronological scheme the author introduced in 1884 the following method of constructing *varve* diagrams, ever since used in all publications in Sweden, Finland, Norway, and elsewhere.

The variation in thickness having been shown to be the only practical way for such comparisons, and the differences as to the absolute thickness at different localities hindering very rapid comparison, induced me to arrange lines, representing the thickness of the *varves* measured, not in a continuous, vertical, row, but in a lying position, the lowermost at the bottom and the youngest at the top, drawn from left to right as abscisses from a vertical ordinate with intervals of exactly 0.5 cm (here half distance).

By help of this constant interval the variation in different localities can be compared at a glance. In fact it was this arrangement that made the whole of the chronology possible.

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For many years I tried in vain to find some means of determining the length of the succeeding post-Glacial Epoch proper, until one of my most successful assistants, R. Lidén, discovered in the northern part of Sweden annual *varves* for that epoch also. Of these *varves* I measured in one section at the Indal river rather more than 3000, but it was along the Angerman river that Lidén himself, quite independently, succeeded in finding and working out practically the whole of the post-glacial *varve* succession by a careful and painstaking correlation of a long series of sections, giving the total length of the post-Glacial Epoch as about 8,700 years. What made his work especially important is that there seems to be no other place in the world, not even in Sweden, where there is a possibility of finding such a continuous *varve*-series for the whole of the post-Glacial Epoch. By the dating of the lowest *varves* the recession of the ice in Sweden has been determined in detail at more than 1500 points, whilst elsewhere, excepting in Finland and in Canada between Ontario and Quebec, sections have rarely been worked out to the lowest *varve*. Thus, along the Connecticut Valley, according to Antevs' exceedingly interesting and comprehensive measurements, the lowest of the clay layers was so seldom exposed, that the particular stages of ice-recession could be determined only at six points on the whole line. Though it is thus impossible to compute the exact rate of ice-recession in this region, his numerous measurements of long *varve*-series have afforded valuable material for detailed comparison with the time-scale in Sweden, and for satisfactory verification of the thickness variation of the *varves* in some otherwise unverified parts of the Swedish scale.

Since the initiative, organization and method of this investigation are of Swedish origin, and it is apparently only in Sweden that the time-scale can be continued right up to the present day, it seems fair to name this standard line of chronology 'the Swedish time-scale', even where it is verified and completed by parallel measurements in other countries. The main purpose of an exact international chronology must be the reference of different kinds of events everywhere, to one and the same standard of time. The necessary condition for the introduction of such a time-scale was, of course, the possibility of identifying synchronous *varve* variations even at great distances. This condition seems now to be realized. Thus almost all the *varve*-series measured in 1920 by the Swedish expedition to North America have, with certainty, been identified with corresponding series in the time-scale in Sweden. This was illustrated by examples representing a few thousand



SWEDISH ICE-RECESSION EPOCHS PROPOSED AS BASIS FOR INTERNATIONAL CHRONOLOGY

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years published (in English) in the *Geografiska Annaler*, Stockholm, 1926. I have also quite recently succeeded in identifying a series of nearly 600 *varves*, carefully measured in Argentina by one of my former pupils, Dr Carl Caldenius. In the same journal was published a description of E. Norin's *varve* measurements in the north-western Himalayas, carried out and identified by him in 1925 and 1926, and also Late Glacial clay-*varves* in Iceland measured in 1919 by H. Wadell and recently correlated with the Swedish time-scale by Ebba Hult De Geer. A continuous series of eight hundred *varves* measured by Dr Caldenius in southern Chile has also been dated by myself and will soon be published by the Geological Survey of Argentina. Among other correlations performed, here it may only be mentioned that the Swedish time-scale has now become extended to the very limit of the Gotiglacial ice-oscillation or to the beginning of the corresponding sub-epoch, giving not quite 8,000 years before the end of the Ice Age and thus considerably less than the 9,500 which were earlier tentatively suggested.

Considering that the distances from Sweden and to these other regions range from 6,000 to 14,000 kilometres, the similarity of more than 80 per cent. of the whole identified *varve*-series is very striking. It is especially noteworthy that this similarity continues for century after century, thus putting it beyond reasonable doubt that only a real identity can explain so considerable a number of similarities.

A close study of the diagrams already published will soon show that the possibility of mere accident must be ruled out. This remarkable coincidence in such rapid variations at such considerable distances, caused by simultaneous melting of ice, seems not to be explicable in any other way than as being due to variations in the amount of heat received from the sun. Thus we have to do with nothing less than a gigantic self-registering thermograph, showing the variations in the radiation from the sun. With respect to the physics of the sun, it is of interest to note that there often exists an observed biennial variation as well as the annual one, which is indicated by the connexion of the *varve* variation of the two hemispheres so that the north and south summers with their closely corresponding *varves* point to a natural thermal year. It is still undetermined in which hemisphere that year begins. For the solution of this question it is of interest that for some years past, observations have been made in Chile, on the solar radiation, for comparison with those executed since twenty years ago on the sunny heights in the far west of the United States. Whatever may be the

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astronomic cause of the annual solar variation, it seems likely that its beginning and end are probably to be found somewhere between the northern and southern summers, or not far from the equinoxes. When this has been fully established, our annual mean temperature ought to be calculated for the natural thermal year, which should give much more characteristic results than those obtained from the basis of the arbitrary calendar year. Nevertheless, though it be granted that *varve*-variation in its general features is a function of solar radiation, it is at the same time more or less influenced by local factors such as the topography of the ground on which the deposit is made, changes in the direction of the melting rivers, the varying composition of the morainic material from which the clay is washed out, and other circumstances. By parallel measurements in different localities, many such deviations from the true solar curve will probably be eliminated, but meanwhile it is not advisable to transcribe the thickness of the *varves* into figures intended for exact calculations. Already, however, a really convincing graphic correspondence makes it possible for the first time to introduce the time factor into a great number of geophysical investigations which were hitherto beyond our reach. Thus, to mention a few examples, the possibility of mapping and dating synchronous land-ice-borders over great areas in different regions of the earth renders it possible, in connexion with the physics of land-ice, to make a rational study of the movement and extension of ice, and of its recession as a function of melting as well as of fracturing. In the papers quoted some hints are given concerning the use of time determination for a closer geophysical study of other processes, such as the evolution of climate, and the erosion along rivers as well as along the shores of lakes and seas. Special mention is made of the magnificent example of the Niagara Canyon, the age of which has now been geochronologically dated by means of good *varve* connexions. Thanks to the excellent measurements of American and Canadian geologists we have here a first-class example of the amount of river erosion under certain conditions during a determined space of time. There is only room here to mention fresh possibilities of studying the way in which the recession of the ice was followed by the formation of soil and vegetable mould, and the immigration of flora and fauna into the former great ice-deserts.

ARCHAEO-CHRONOLOGY

In the autumn of 1924 I had the welcome opportunity of starting under the auspices of the University, a Geochronological Institute for

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the preservation, elaboration and extension of material in connexion with the Swedish time-scale and its international use. Up to the present time twelve preliminary papers have been issued from the Institute, and published in various Swedish scientific journals under the common title of *Data*. The first of these, *Data 1*, was published in Swedish and was entitled *Förhistoriska tidsbestämningar*, or Prehistoric Datings. It may be well to summarize here some of the views expressed, as exemplifying the archaeological use of the new time-scale.

The period of man is a late conception in the history of the earth, for the first reliable traces of beings who can be considered deserving of the name of man can hardly be found in deposits earlier than the Quaternary period. These deposits form the comparatively thin soil which covers the older formations with their remarkable remains of plants and animals, which more or less differ from any existing species. Naturally enough, these earlier layers formerly attracted the most attention, and the Quaternary deposits were looked on mainly as a hindrance to the study of the older formations. Geologically speaking, the Quaternary period was a very short one, and the corresponding geological deposits are, in many places, inconsiderable and uninformative. Moreover they vary considerably from one region to another, both in thickness and material, and no general classification of sub-divisions has hitherto been possible. Now, however, there are special opportunities of gradually establishing a real time-scale for the Quaternary period.

It would seem that the remarkable deterioration of the climate, which caused the glaciation of the Quaternary period and can now be shown to have affected the whole of the earth simultaneously, must have had a great influence upon the ancestral forms of man, and especially so in the regions where it was most severe. This influence may, indeed, have been the immediate cause of that adaptation to more and more exigent natural conditions and the consequent evolution of intelligence, which led to the beginning of the human stage. This was especially true of regions where the supply of edible fruits became insufficient and fishing and hunting became necessary. This led to the development of skill and weapons, whilst the rigours of climate necessitated the use of clothing and sheltered dwellings. One invention led to another, such as the making of boats, the art of pottery, and that important step in human evolution when man took fire into his service. By extensive excavations in many regions, archaeology has now been able to establish the succession in which the various types of tools and weapons follow

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each other and also which species of animals and plants have been observed together with these finds. In this way, for certain regions, it has been possible to establish so regular a succession of strata as may well justify attempts at correlation within limited areas. With regard to finds from more widely separated regions, however, the risk of error is naturally growing. Primitive types of tools, for instance, are known to have originated independently in different places and epochs and may likewise have been used for varying lengths of time in different regions. Thus, to take a well known example, certain tribes have existed up to the present day with no knowledge of metals, and are still, to all intents, living in a kind of Stone Age.

Attempts have often been made to establish the sequence of those climatic changes which seem to be indicated by the organic remains found in various archaeological strata. At many places, however, the sequence of strata is very incomplete and, as the Quaternary period shows several considerable climatic variations, it is often difficult to decide to which of these isolated prehistoric finds should be attributed. Most Quaternary geologists, however, seem to agree that at least two separate glaciations must be regarded as well established, those known respectively as the Great and the Last Glaciation. Of these the last is incomparably the best known, since it is the only one of which the deposits are accessible for close investigation. The deposits of the Great Glaciation are nowadays preserved almost nowhere but outside the limits of the Last Glaciation. Deposits from the older stages of the glaciations are often concealed or totally destroyed by the later movements of the land-ice. It is not, therefore, surprising that geologists hold very different views with respect to the number as well as the extent of the oscillations of the ice, and also to the question of how many of these may be ranked as independent glaciations. The difficulties in the way of solving this important question are very great, but until they are overcome it is too early to attempt to relate the older cultural epochs of the Palaeolithic Age with the glacial or interglacial stages.

The last receding land-ice has, however, left to posterity a remarkable and complete auto-registration, covering the whole of the melting epoch. There is here no question of relative computation, but the direct reading and counting of the *varves* deposited by the water formed every year, as long as the melting epoch lasted. For the late Quaternary epoch, after the maximum of the Last Glaciation, we have already a very comprehensive series of measurements from a great number of localities, and when the whole has been worked through we

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shall have an exact time-scale for the period which is by far the most important in the evolution of prehistoric cultures. The next stage is to find some region where sediment accumulated during the whole of the Quaternary epoch, in its glacial as well as post- and inter-glacial stages. These conditions may be found to prevail in several delta regions which received sediment from some greater glaciated area throughout the Quaternary period. Such was the relation of the Ganges-Brahmaputra delta to the eastern Himalaya. It would, however, be impracticable to begin with so immense an area before the method had been tried on a smaller one. The Indus delta would, from every point of view, be more suitable. This delta has recorded the sedimentary deposits from the Kashmir area of the north-western Himalaya, where, in connexion with the Geochronological Institute, E. Norin has begun to make a comprehensive analysis of the Quaternary deposits, which already seems to give a direct correlation with the Swedish time-scale. It might however prove still more convenient in the first instance to take up the investigation of a delta more easy of access, such as that of the Po, which might be expected to offer a fairly complete registration of Quaternary deposits from the whole southern slope of the Alps.

In order to connect archaeological finds with the time-scale, several different phenomena can be used. Thus, the situation of the ice-border at different stages of its recession can be dated and mapped, whereby it is possible to date cultural remains as well as traces of animals and plants, which immediately followed in the track of the retreating ice. This can probably be done in the case of the Quaternary ice-dammed lake Pulawy, which was discovered by N. Krichtafowitch, south-west of Warsaw, between the Vistula and the Bug. This lake reached as far as the limits of the last glaciation and its sediments, showing no *varves*, are covered by the last moraine and contain remains of plants and animals, including *Elephas primigenius*, *Rhinoceros tichorhinus*, *Bos priscus*, *Equus caballus fossilis* and *Sus scrofa fossilis*; also pieces of bone, and flint tools which were referred by S. Krukowski to the Solutrean epoch.

It is obvious, however, that all attempted co-ordinations founded only on the occurrence of certain organisms must be merely approximate. Amongst the more reliable geophysical phenomena a first place will doubtless be occupied by such ancient shore-lines as can be dated with some accuracy and are adapted for the dating of prehistoric remains, especially those pertaining to shore-dwellings. It is true that positions

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of the edge of the retreating ice can be dated with still greater accuracy, but, in the central parts of northern Europe at least, human occupation had not begun at that time. During the last few years it has been found possible, by a new method of investigation, to follow step by step, and fix by levelling, the present height of a series of unevenly uplifted shore-lines dating from the nordic Bronze and Stone Ages. These measurements, which I started some years ago in the Stockholm-region, now embrace the greater part of the Neolithic marine area within the eastern-central parts of Sweden from Ostrogotia to the south of Helsingland. In this way very reliable and detailed knowledge can be obtained concerning the withdrawal of the coast line and the growth of the emerging land. It has also been found possible to connect the different stages of coastal evolution with the Swedish time-scale, and so to date approximately all the phenomena which can be connected with such coast lines.

The question of eustatic shore-lines seems to be more complicated and has not been brought into any connexion with geochronology.

On the whole it seems desirable that relative as well as approximate time computations should be expressed in another way than real datings and without figures, which give a misleading impression of precision and certainty.

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Cornish Place-names

by J. E. GOVER

THE archaeological interest of place-names has been dealt with by Mr Crawford in his article 'Place-names and Archaeology' published by the English Place-name Society.¹ In that article numerous words associated with prehistoric or ancient remains are grouped together and their meanings discussed in detail, but up to the present time very few attempts have been made to deal with words of a similar kind in Cornwall.

In the course of several years' study of the place-names of Cornwall I have amassed a considerable amount of evidence which may help to throw light on the dark period of Cornish history prior to the English conquest. As some years may elapse before the results of this survey are published, a brief discussion of some of the more interesting names in the county and in particular those names which have an archaeological or historical significance, may be of interest, and at the same time indicate in what direction future work of this kind should lie.

The names with which I propose to deal may be for the sake of convenience divided into two groups. To the first belong those words which refer to ancient camps, strongholds or defensive enclosures, such as *caer*, *din*, *dinas*, *castel*; to the second belong words which refer to graves, barrows or stone monuments of some kind, such as *cruc*, *menhir*, *cromlech*. There are in addition a few miscellaneous words which cannot easily be placed in either group.

GROUP I

CAER. The original meaning of this word seems to have been 'fort' or 'camp', and it is worth noting that in many cases the word 'camp' is marked on the map near the site of places in Cornwall bearing this prefix.

Caer corresponds roughly to the English *bury* in such names as Tidbury, Cissbury, Chanctonbury. It occurs in Wales with a similar

¹ Place-name Society, 1, part 1, 143.

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meaning, but the Breton equivalent *Ker* has come to have the sense of 'village', a change for which historical reasons can account. The word occurs in Cornwall about 110 times as a prefix in place-names and is found throughout the county, including the extreme east. It is also not uncommon in the plural form *Kerrow*, *Keiro*, *Cairo*, *Pencarrow* (*Caerou* 1302, *Cayrou* 1327 etc., *Penkayrou* 1327, *Penkeyrou* 1420) and in the name *Tregear* (*Tregaer* 1256 etc., *tref*, 'homestead'). Some places are called simply *Cair*, *Gare*, *Gear*,² but as a rule the word is followed by some defining element. This may be (1) descriptive, as *Carwyn* (*Kaerwen* 1317, 'white'), *Cardew*, *Carthew* (*Kaerthu* 1284 etc., 'black'), *Carvean* (*Carvyghan* 1317, 'little'), *Carvinack* (*Carveynek* 1327, 'stony'). (2) a personal name, as *Cargenwyn* (id. 1375, 'Cenwyn' = Cuno-uindos), *Carwythenack* (*Kayrwethenec* 1300, 'Gwethinoc'), *Carveddras* (*Kaervodred* 1296, 'Modred').

It does not follow that the men bearing these names actually held or defended these 'camps'. It is more likely that the names are those of settlers who owned land near these places at a much later period of history. A name such as *Carsawsen* (*Corsawsyn* 1556) may however actually refer to a Saxon stronghold planted in Celtic territory at some early date. *Carsawsen* is in Mylor parish in West Cornwall.

There are one or two *Caer* names, which are perhaps of sufficient interest to deserve special mention.

Carlyon (*Karleghyon* 1286, *Caerleghion* 1287, *Carligion* 1327) is the name of two farms, one in Kea parish near Truro and the other in St. Minver further to the east.* There is no reason to doubt that the name means 'camp of the legion', being thus identical with *Caerleon* in Monmouth and the *Carlegion* of Bede (ii, 2), which is the modern Chester. Roman soldiers, or rather soldiers of the Roman Empire, may have been stationed at these two places at some distant period, and doubtless the memory of their presence remained long after they were gone and gave name to the sites. It may be pointed out that the two *Carlyons* occupy commanding positions, that in Kea overlooking the Fal estuary and that in St. Minver the Camel estuary. Also a few miles east of the latter place is a hamlet called Plain Street, suggesting

² For *an gaer*, i.e. the *caer*, the definite article causing 'lenition' of the initial consonant.

* It would be interesting to learn whether any prehistoric or Roman earthworks or finds are known at these 'Carlyons' and 'Merthens'. Perhaps some readers can help?—Ed.

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an ancient track or road, which may have ended at the river near Carlyon and opposite the present Padstow.

Tregorland (*Kaercorlan* 1302, *Cargorlan* 1327—the change of prefix is late) contains as second element the British word *corlan*, 'sheepfold'. The meaning may be thus simply 'camp of the sheepfold'. It is however possible that there was no actual fold here, the *caer* being named from its bearing at a distance some sort of resemblance to an enclosure of that kind. The name would then be of the same type as the English *stodfald*, discussed by Mr Crawford in *Introduction to the Survey of English Place-names*, i, 151.

DIN is a much rarer word occurring only some twenty times. In most cases it must have denoted something larger than a *caer*, since many of the *din*-names adjoin some of the largest earthworks in the country. There is also good reason for supposing that the name was applied to strongholds of a later period than the *caer*-names. One or two examples may be noted.

Merthen is the name of a place in Constantine and in St. Austell. There is also a Merthen Point in Buryan on the coast. The early spellings *Merdin* 1186, *Meredin* 1202, *Merethyn* 1235, *Marthyn* 1556, show that the name is identical with the *Moridunum* of the Antonine Itinerary, the ancient name of Carmarthen, Wales. The situation of the Cornish places on or near the sea agrees with the etymology of the name (*mor*, 'sea' and *dunum* = *din*). The large camp at Merthen in Constantine may have been constructed to guard the estuary of the Helford against the attacks of pirates.

Denzell in Mawgan (*Dynesel* 1241, *Dynisel* 1277³), Domelioc in St. Dennis (*Dimelihoc* 1086, *Dynmyliec* 1318⁴) and Demelza in St. Wenn (*Dynmaelda* 1309, *Dynmalsa* 1342⁵), all lie round the great camp of Castle-an-Dinas in St. Columb and were perhaps outlying strongholds attached to that place. The name Domelioc suggests the *Damelioc* of the Arthurian legends, but that place is more likely to have been Castle-an-Dinas itself, which seems to have been a royal residence in early Cornish times (v. *infra*).†

Dinham, Cardinham and Tredenham contain the diminutive form *dinan*. The fact that *din* could be compounded with *caer* makes it clear that the meanings of the two words were not identical.

³ *isel*, 'low' (?) ⁴ *Milioc*, personal name. ⁵ *Maeldaf*, personal name: (**Maglo-tamor*).

† Compare also the *MILIDVNVM* of Ravennas, which lay somewhere in the West country.—ED.

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Din is found in combination with *Tre* in the form Treen (*Trethyn* 1314, 1321, *Tredyn* 1304). The two places so named are situated at opposite ends of the Land's End peninsula on narrow promontories, on each of which is a well-preserved 'cliff castle'.

DINAS is a derivative of *din* with probably much the same meaning. The corresponding Welsh word now means 'city',⁴ but the original sense is preserved in place-names. The modern Cornish form is often corrupted to *-dennis* as in Pendennis by Falmouth, where there was an old earthwork on the site of the later castle built by Henry VIII.

Castle-an-Dinas in St. Columb (v. *supra*) is mentioned as 'Castel an dynas' in the Cornish drama *The Life of St. Meriasek*. It is there said to be the chief place (*pen plas*) of Teudar, a heathen king, who had also another stronghold at *Les-teudar* (now Lestowder) in St. Keverne near the Lizard. Possibly *dinas*, like *les* (*infra*), was a name which could be applied to the residence of a king or chieftain.

CASTEL (*Cestel*, *Kestel*) is a name not uncommon in Cornwall, the modern form being usually Kestle. It is, like Welsh *castell*, an early borrowing from the Latin *castellum* and occurs in an original charter (BCS. iii, no. 1197, A.D. 967) in the name *cestell merit*, now Kestlemerris in St. Keverne.

It is difficult to decide what the exact meaning of the word was in place-names, but it has been thought to refer to forts of a later period than *caer* and *din*. This may be so, but the remains found near the Cornish 'kestles' appear to be of a similar type to those found near the 'caers'.

One *castel* name is perhaps worth special mention.

Castlewary in Helston parish (*Castelwary* 1338, *Kestelwary* c. 1350), would seem to contain the Cornish *gwary*, 'play', as second element—best known in the compound 'Plan-an-gwary', 'place of play', a name applied to amphitheatres, natural or artificial, where the Cornish miracle plays were performed. One cannot tell whether this denoted simply a *castel* near which people played, or possibly a *castel* the ruins of which were used for the performance of miracle plays.

LES is a name applied to strongholds of a much more recent date. It is the Welsh *llys*, 'court, palace', and probably denoted the residence of some chieftain in the pre-English days, when the county was still divided up into numerous petty principalities. For this reason names in *les* are not common, and as a rule there is about one to each

⁴ Due to the use of the word in the Welsh Bible.

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hundred, the Cornish hundreds corresponding as a rule to old tribal divisions.

Helston (*Henlistone* 1086, *hen*, 'old') is the name of two places, a town in West Cornwall and a hamlet in East Cornwall. The eastern one was perhaps the chief place of the Pagus Tricurius², the land between the Camel estuary and Devon, the centre being shifted later to Lesnewth (*neweth*, 'new'), about seven miles distant.

Arrallas in St. Enoder (*Arganlis* 1086, *Argantles* 1259) contains the Cornish *argant*, 'silver', as first element. The meaning of such a combination is not very clear, but the fact that the defining element is placed first is evidence that the name is of great antiquity.

GROUP II

The second group of words to be discussed are those dealing with graves, burial mounds, or stone monuments marking the site of such.

The actual Cornish word for grave was *beth* (Welsh *bedd* as in *Beddgelert*), which, however, occurs but rarely in place-names. An example is Penbetha in Creed (*penn below* 969 BCS. iii, no. 1231, A.D. 969; *Penbethou* 1354), meaning literally 'the end of the graves', which suggests that there must at one time have been a burial-place here though no traces appear now above ground. Trembethow in Lelant (*Trembethou* 1298) and Trembleath in Mawgan in Pyder (*Trembeth* 1370), 'the settlement by the grave(s)', are the only other certain examples of the word in Cornwall.

CRUC means literally a hillock or mound, but was probably applied as a rule to tumuli or burial mounds, though in a few cases such as Carclaze (*Cruglas* 1284, *Curclas* 1426, *glas*, 'green') the name may have referred to a natural hillock. At many places bearing this prefix a 'barrow' is still marked on the map, and probably a good many more formerly existed, but have since been levelled by cultivation.

Cruc occurs as a prefix in the form *Creeg-*, *Crug-*, *Crig-* in many Cornish names, but in some cases it has been confused with *caer* as in Carclaze (v. *supra*), Carlidden (*Cruckledan*³ 1356), Carnivas (*Crucneves* 1296, *Crugnyves* 1320, v. *infra*), Carclew (*Cruklew*³ 1340), Carplight

² So called in the *Life of St. Sampson*. Now Trigg hundred.

³ 'broad'. ³ *Leto*, personal name.

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(*Crucbleyth*¹⁰ 1302). It is also common in the name Trencreek (*Trencruk* 1262 etc., 'homestead by the barrow')¹¹.

A few names of interest may be noted.

Carnivas may contain as second element the old Celtic *nemeton* ('grove') which in West Cornwall would become *neves*, *nives*.

Egloscruc is the old name for St. Issey, suggesting that the church was built on the site of an ancient barrow.

Creegavose in St. Stephen in Brannel (*Crugkeyroos* 1345) is a compound containing the words *cruc*, *caer* and *fos*, 'ditch', 'trench'. Unfortunately the whole of this parish has been turned upside down by china clay works, so that an examination of the site is not likely to give any clue as to the origin of the name.

Cartole in Pelynt (*Cruktoll* 1284, *tol*, 'hole') and Trekennick in Altarnon (*Crukeynek* 1332, 1368, *Curkeynek* 1394—*keynek*, 'ridgy') are names implying some peculiarity of shape or appearance. Barrows still exist at the former place, so that a personal visit might even now throw some light on the meaning of the compound.

MENHIR, 'long stone', occurs in the place-names Tremenhære (four examples). At two of these—in St. Keverne and Wendron—a 'long stone' is still standing, while at another—in Ludgvan—there was one complete in Borlase's time, since broken up. The simple *Maenhir* occurs in Creed (*Manheirs*) and St. Austell (*Menheer*), but at neither place do there appear to be any remains at the present day.

The ordinary word *maen*, 'stone' is of course not uncommon as an element in Cornish names, but in most cases a natural stone is probably referred to. However, Tolvan in Constantine (*Tolvaen* 1302, 1310, *Tolven* 1327) doubtless took its name from a stone with an artificial hole,* similar to the well-known Men-an-tol near Penzance.

Condolden in Minster (*Gondolvaen* 1298, *Goyndolván* 1302) seems to contain the same word, the prefix being the Cornish *gwon*, 'plain, down' etc. (Welsh *gwaen*). There is a hill here 1000 feet high, crowned by a barrow, but no stone remains.

¹⁰ 'wolf'.

¹¹ In addition to the names cited, the following car- names originally had the prefix *crug-*, which became corrupted into *car-* (*mounds*, therefore, not *camp*s should be looked for in the vicinity):—Carcade (Davidstow); Cargibbet (St. Ive); Cargurral (Gerrara); Carkeval (St. Kew); Carlennick (Creed); Carloggas (Mawgan in Pyder); Cartuther (Menheniot).

* The holed stone still exists and was illustrated in *ANTIQUITY*, I, 230. See also a note on 'Holed Stones' by Mr J. T. Blight, published as appendix I of the 44th report of the Royal Institution of Cornwall (1862), pp. 24-7.—Ed.

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CROMLEGH occurs three times in the quaint form Grambler or Grumbler (*Gromlegh* 1327, 1504¹²), but at none of these places are there any remains now visible, though 'cromlechs' are to be found elsewhere in the county. The simple *legh* (Welsh *llech*, 'flatstone') occurs in a few names such as Fenterleigh in Tintagel (*Fentenlegh* 1338, *fenten*, 'spring', 'well'), Treslay in Davidstow (*Roslegh* 1086, *Roslegh* 1338, *ros*, 'moor'), Treleigh in Redruth and elsewhere (*Trelegh* 1302 etc.), Releath in Crowan (*Redlegh* 1270, *red*, *ret*, 'ford'), but in most of these instances the stone referred to is probably a natural one.

MISCELLANEOUS NAMES

GADLES in Gluvias (*Gadles* 1327) seems to be identical with Welsh *cadlys*, 'entrenchment'.

MAKER (*Macuir* c. 1000, *Macre* 1201) and MAGOR in Camborne (*Magoir*, *Magoer*, *Magur* 1302) are the equivalent of the Welsh *magwyr*, 'wall, enclosure', a borrowing from the Latin *maceries*. The situation of Maker on a narrow peninsula commanding the Tamar estuary favours the presence of an early stronghold here, though all traces of such would now have been obliterated by modern forts.

GWALLAN in St. Hilary (*Wallan* 1342, *Gwallan* 1415) seems to be a diminutive of *gwal*, 'wall, rampart', a borrowing from Latin *vallum*. It is found combined with *caer* in the place-name Carwallen in St. Austell (*Carwallan* 1370).

BOR and BUR answer to Welsh *bur*, 'embankment, entrenchment' as in Borlase in St. Wenn (*Borlas* c. 1290, *Burlas* 1327, *Bourlas* 1342, *glas*, 'green'), Burgois in St. Issey (*Burgeys* 1327, *Borgoys* 1423, *coit*, *cois*, 'wood') and Burlerrow in St. Mabyn (*Bourlerowe*, *Burlerowe* 1421). Early spellings are required to separate this word from *bar*, 'top, summit' in Cornish place-names.

CARN in Cornish place-names is better translated 'rock' than 'cairn', the word being used in the former sense in the medieval dramas. In the Land's End district it is sometimes applied to a rock pile, but there is no evidence that it was early used with this sense.

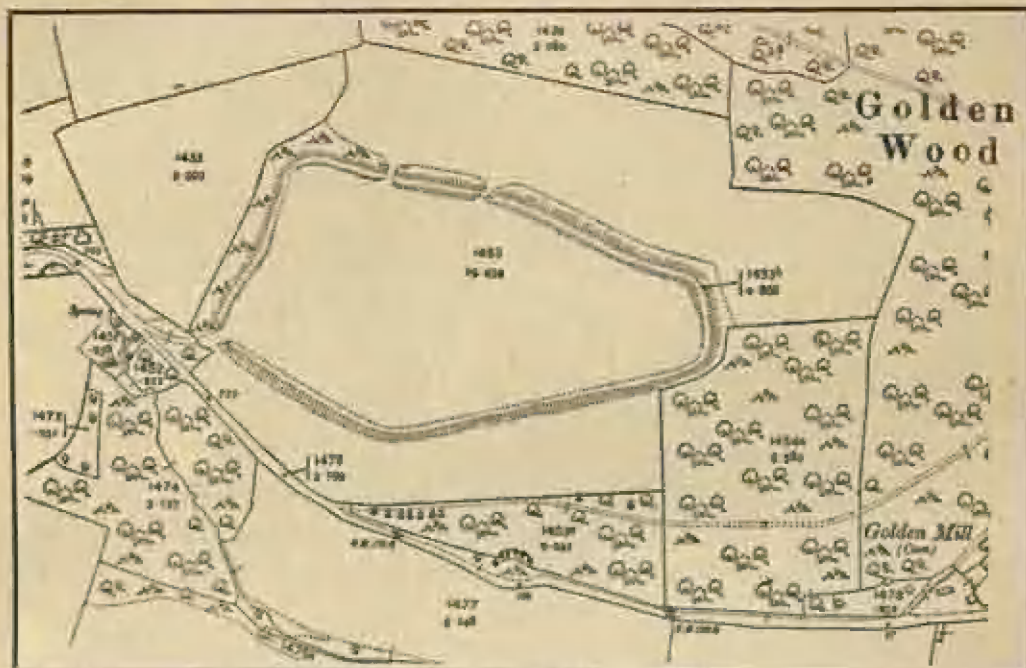
FOS means a ditch or trench, corresponding to OE *dīc*. The word, like the Welsh *ffos*, is an early borrowing from the Latin *fossa*. It occurs as a suffix in Trevoise and Penvose (six examples), in Trevozah in St. Petherwin (*Trevosou* 1323 etc., plural of *fos*) and as a prefix in Fursnewth in St. Cleer (*Fosnewit* 1086, *neweth*, 'new'). Whether the

¹² The definite article *an*, understood, causes 'lenition' of the initial consonant.

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word had ever any archaeological significance cannot be determined without local investigation.

CANT in St. Minver (*Canta* 1284 etc.) contains the word *cant*, 'circle', 'rim', referring to the round hill here by the Camel estuary. Tregantle in Antony and Lanlivery contains the derivative *cantell* with similar meaning. The Antony place is *Argantel* in 1086 (*ar*, 'upon'). It is not certain that these names referred to fortified sites, though the situation of Cant favours this.



EARTHWORK AT GOLDEN (VOLIBA?), NEAR PROBUS, CORNWALL
From the Ordnance Map LVIII, 2, by permission of H.M. Stationery Office. Scale 1:3000

GOLDEN in Probus is near the site of a large 'camp', one of the most complete in the county. The early forms are *Wolvadon* 1327, *Wolvedon* 1329, *Woulvedon* 1508, *Wuluedon al. Goldoun* c. 1550, so that there is good reason for identifying the place with the *Ὀβολίβα* of Ptolemy,¹³ though the exact site of that is not known. It is however stated¹⁴ to have been somewhere in this part near the Fal, and since

¹³ Ptolemy, ii, 3 § 30.

¹⁴ Camden, *Britain* (1607), 189.

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Golden is on a branch of that river, there is a strong likelihood of the two sites being identical. It must be remembered that the Fal was once navigable to a much higher point than at the present day. Tregony, now three miles or more above the tide limit, was formerly a flourishing port.

Mr Crawford in his article 'Place-names and Archaeology', quoted above, mentions several instances in England of mocking names such as Rat's, Owl's, Spider's Castle, Mole's Chamber, etc., which were applied to deserted places where nothing but ruins were to be seen.

Many of the Cornish words which have been discussed, e.g., *caer*, *cruc*, are found compounded with an animal name, but most of these names are probably to be interpreted literally, though such a compound as Carloggas (*Kaerlogoos* 1320, *Karlogas* 1340) might refer to a deserted *caer* tenanted by mice. As Cornwall was not conquered by the English till a late date, there would have been less destruction and desolation than elsewhere in England.

The above notes will show how much field work remains to be done in this part of the country. It has not been possible to indicate more than a few of the more interesting names, but the fact that the word *caer* alone occurs about 160 times in the county gives some idea of the vastness of the subject. At many places archaeological remains are marked on the 1" or 6" maps, and at others a visit to the spot by an expert might reveal something either above or below ground. It must be remembered that in the course of time barrows have been levelled by cultivation, and stone monuments have been broken up by farmers to serve as gateposts or for the building of stone hedges. This work of destruction continues yearly; even as recently as Borlase's time there were *menhirs* and *cromlechs* standing which have since vanished.

It would therefore lead to interesting results if some or all of the places in the county containing the words discussed above could be examined by an expert. There is no doubt that much would be discovered which is not to be found in maps and histories. It is to be hoped also that a careful study of the place-names of Cornwall, and wherever possible a comparison with names of a similar kind in Brittany and Wales, may ultimately serve to throw some light on the early history of the county, which before the time of the English conquest still remains in almost complete darkness.

Scandinavian Thing-steads

by F. WILDTÉ

THE Scandinavian peoples emerge into the light of history much later than their neighbours in the South and the West, the Teutons on the Continent and in England. It was only through the Viking raids that the Nordic peoples came into touch with the rest of Europe, and were gradually converted to Christianity. Long after the introduction of the Christian faith they preserved many peculiar and archaic traits. Thus the Nordic peoples retained, with great tenacity and conservatism, their ancient judicial system. This system has therefore been the object of considerable interest even outside Scandinavia, although the manuscripts through which it has become known are much later than the corresponding documents of other Teutonic nations.

An investigation of the localities where justice was dispensed in former ages is of importance not only for the history of civilization, but also as a complement to the study of oral and written tradition, and thus to the history of law itself. In view of the many points of similarity between the judicial systems of the various Teutonic nations, some notes on the Thing-steads, or places of assembly, in Sweden, Norway, and Denmark, may perhaps be of interest to English-speaking readers.*

During the Viking Age the Nordic countries, especially Norway and Denmark, were already in close communication with the British Isles. The Swedes mainly turned their expeditions in an easterly direction; but that they also took part in raids towards the West is

* For a more detailed account of the Thing-steads in Sweden, the reader is referred to a paper in the Swedish journal *Fornvännen*, 1926, by F. Wildté: *Tingsplatserna i Sverige under förhistorisk tid och medeltid*. With regard to Denmark, cf. a paper in *Aarbøger for nordisk oldkyndighed og historie*, 1902, by Carl Neergaard: *Thingste og Thingdytter*. Both these papers give further references.

With regard to the judicial system in Scandinavia as a whole, see Karl von Amira, *Grundriss des germanischen Rechts* (in *Grundriss der germanischen Philologie* 5, Strassburg, 1913).

PLATE I



THE ROYAL GRAVEGROUNDS AT GAMLA UPSALA, SWEDEN, CONTAINING THE BODIES OF
THREE SWEDISH KINGS MENTIONED IN BEOWULF

PA. GRANBERG, Stockholm

SCANDINAVIAN THING-STEADS

proved by several Runic monuments in eastern Sweden, recording the expeditions of Swedes to England. On the other hand the English carried on a vigorous missionary activity in the Scandinavian countries, the traces of which can still be seen in our oldest monuments of sacred art.

It is of course difficult to form a definite opinion on Thing-steads in Scandinavia during the prehistoric age. But from the well-known conservatism of the law we may infer that no great changes accompanied the introduction of Christianity. The Church, moreover, had no interest in making any changes in such matters, and thus we may assume that our oldest written sources reflect conditions which had remained unchanged since ancient times.

Like the other Teutonic tribes the Nordic peoples held their assemblies under the open sky. At these assemblies—Things—not only was law dispensed, but all public affairs were decided. During the Middle Ages the Things lost more and more of their political importance, but it was only at a comparatively late epoch that they became purely judicial assemblies.

There were different kinds of Things, corresponding to different judicial districts. In Sweden, the smallest district both for judicial and administrative purposes was the *heradh* or *hundari* (cf. Engl. hundred), and in some coast provinces *skiplagh*. In Denmark, the corresponding district was the *haeret*. *Herred* is also the earliest division in southern Norway. But in Norway the term *skipreisa*, originally peculiar to the coast districts, was extended generally to the smallest judicial districts.

Each of these districts (*provinciae*) had its own Thing. But they were united into greater units, called in Sweden and Denmark *land* (*terrae*), in Norway *fylken*, with Things of their own (*landsting*, *lagthing*). There were also other kinds of judicial divisions, of which I shall mention here only the *syssel* (a union of a number of *haeret*), peculiar to some parts of Denmark. The towns formed distinct judicial divisions.

Since olden times the Things seem to have been held at fixed dates and in fixed places. In several of the oldest Scandinavian laws we find directions concerning the locality of the Things. Thus *Erik's saellandske lov* (first half of the 13th cent.) states definitely that a legal Thing is characterized by three qualities: the locality, the times, and the people. *Magnus Eriksson's Landslag*, which about 1350 replaced the various provincial laws of Sweden, ordains that there shall be in

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each *haerad* a fixed Thing-stead, *raetter thingsstadher*. The Norwegian law, *Magnus Lagabeter's Landslov* (latter half of the 13th cent.), contains similar regulations.

It seems probable that cult-centres have also been used as Thingsteads. Several localities, in which Things are known to have been held during the Middle Ages, have names indicating that they were formerly places of worship. These centres of cults and jurisdiction probably often served also as marts; and many towns which have subsequently attained to great importance trace their origin back to such old places of assembly, used for different purposes. To mention an instance:—the Swedish town of Karlstad originated in the old *Tingvalla*, a place where the peasantry since the oldest times were accustomed to assemble for the purpose of holding 'things' and marts. The name itself indicates the original character of the place, just like Tingwall (pingvollr) in the Orkneys, Tynwald in the Isle of Man, Dingwall in Scotland, etc.

The Things were preferably held on eminences easily visible from the surrounding country, natural hillocks, grave-mounds, etc., so-called *Thing-mounds*, which in several ways are suitable for judicial proceedings under the open sky. The Court could take their seats on the mound, while the audience assembled around it—an arrangement both picturesque and practical. If the country was flat, as in many parts of Denmark, such a mound or barrow was the natural place of assembly. The custom of holding Things on hillocks or mounds would seem to have been general among the Teutonic tribes, and instances might be quoted from many countries.¹

Of Scandinavian countries, Denmark has the greatest number of Thing-mounds. They seem to have been especially characteristic of the plains of Jutland, from which country Neergaard quotes numerous instances of Things being held on grave-mounds.² The reason for assembling on these mounds was no doubt their wide visibility across the heaths. Mounds situated near the centre of the judicial district, or near a crossing of its main roads, were preferred. Sometimes there were several Thing-mounds within one district.

In Sweden the country is mostly hilly and thus in many places offers natural facilities for Thingsteads. Consequently it is now sometimes difficult to recognize them, but nevertheless several mounds

¹ Cf. Amira, *op. cit.*, p. 252.

² Neergaard, *op. cit.*

SCANDINAVIAN THING-STEADS

are known from different parts of the country. There is one at Gamla Uppsala, the ancient cult-centre of the Swedes, where a heathen temple once stood on the site of the later Christian church, and where several kings were interred in heathen times. (Plate I). Another Thing-mound is found at Larv, in west Sweden; it was no doubt originally a grave mound.

The Swedish Thing-mounds seldom have a flattened top, as for instance has the famous Tynwald Hill in the Isle of Man; and where such an arrangement is found it is mostly very simple in character. One Thing-mound in middle Sweden is surrounded by a low earthen rampart, while the mound itself is a natural eminence.

A specially interesting feature characterizes the Inglinge Mound in Småland (south Sweden). On the top of the mound, which is flat and slightly sloping towards the south, there is a tall monolith, and at the foot of this monolith lies a stone ball, profusely ornamented. This arrangement, of which the Inglinge Mound is the only instance preserved, is supposed to be typical of certain mounds in Sweden, where in ancient times homage was paid to a new king, and where he exercised his authority. Such ceremonies no doubt took place on the Tynwald Hill.³

Thing-Mounds in the proper sense of the term apparently do not occur in Norway. It is true that there are grave-mounds, but they are not known to have been used for 'Things'. As in Sweden, the mountainous nature of the country offered facilities for Thing-steads.

Popular tradition has always asserted that Things were held at circles or rings of large stones, many of which survive in Sweden and Norway from prehistoric times. These monuments usually consist of six or twelve, sometimes of as many as twenty-four, large stones, placed in a ring at regular, and rather wide, intervals. They are generally circular, but sometimes oval or square, in form. (Plate II, fig. 1). The monuments in ship form are probably of the same character. (Plate II, fig. 2).

Archaeologists have not yet succeeded in explaining the original purpose of these stone circles, but the graves sometimes found in or near them seem to indicate that they date from the Iron Age. They are thus apparently later than the similar stone circles in England. Some scholars think that the circles served as places of assembly for the

³ A Swedish scholar, Professor Sune Lindqvist, has drawn a parallel between the Inglinge Mound and Tynwald Hill. See the Swedish journal *Rig*, 1925.

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purpose of worship as well as for the purpose of jurisdiction. The stone circle is thought to have served to separate the court from the rest of the Thing-stead during the legal proceedings.⁴ Others are of opinion that the circles, although sometimes used for worship or jurisdiction, were originally connected with sepulchral customs. Even if the stone circles, which are very common for instance in the west of Sweden, were perhaps not originally intended for jurisdiction, it is nevertheless demonstrable that they were often used for this purpose, since several Thing-steads in Sweden, known since the Middle Ages, are situated close to such stone monuments.

In Denmark, where stone monuments of this kind are rare, Things seem to have been held at another kind of ancient monument, the so-called 'dolmens'. The custom of holding Things at ancient monuments is known also from other countries.⁵

In this connexion it may be pointed out that there are in Sweden some Runic monuments (dating from about A.D. 1000), the inscriptions on which state them to be erected at a Thing-stead. At least one of them stands at a spot which, as late as the middle of the 15th century, was called 'commune placitum provinciae'.

But there is not always an old cult-centre, a grave-mound, or other ancient monument, at which earlier generations have been accustomed to assemble, available as a natural Thing-stead. And even if there is such a place, it may be situated, or in the course of time become situated, in an unsuitable locality. The Thing was preferably located at a central place in the judicial district. This applies especially to the Things of larger districts, (corresponding to the English shire-moots) which already at an early age appear to have been held at some important centre. With regard to the smaller districts, there is also a decided tendency to fix the Things at the chief place of the district, or at some central locality. During the Middle Ages large parts of Sweden and Norway were still very sparsely populated, and between the villages there were, as there often are to this day, large tracts of forest or mountainous country. In such circumstances it is natural that the Things should take place in the church-villages.* Numerous instances of this practice are known from Dalarne (Dalecarlia) in Sweden.

⁴ In Sweden the circular or oval rings are traditionally called *domareringar* (in English: 'judges' circles').

⁵ Cf. on this point J. Grimm, *Deutsche Rechtsalterthümer*. 4th ed. (1899) II, 424.

* This expression has a special meaning in Scandinavia where *villages* are rare, the usual form of settlement being the farm.—Ed.

PLATE II



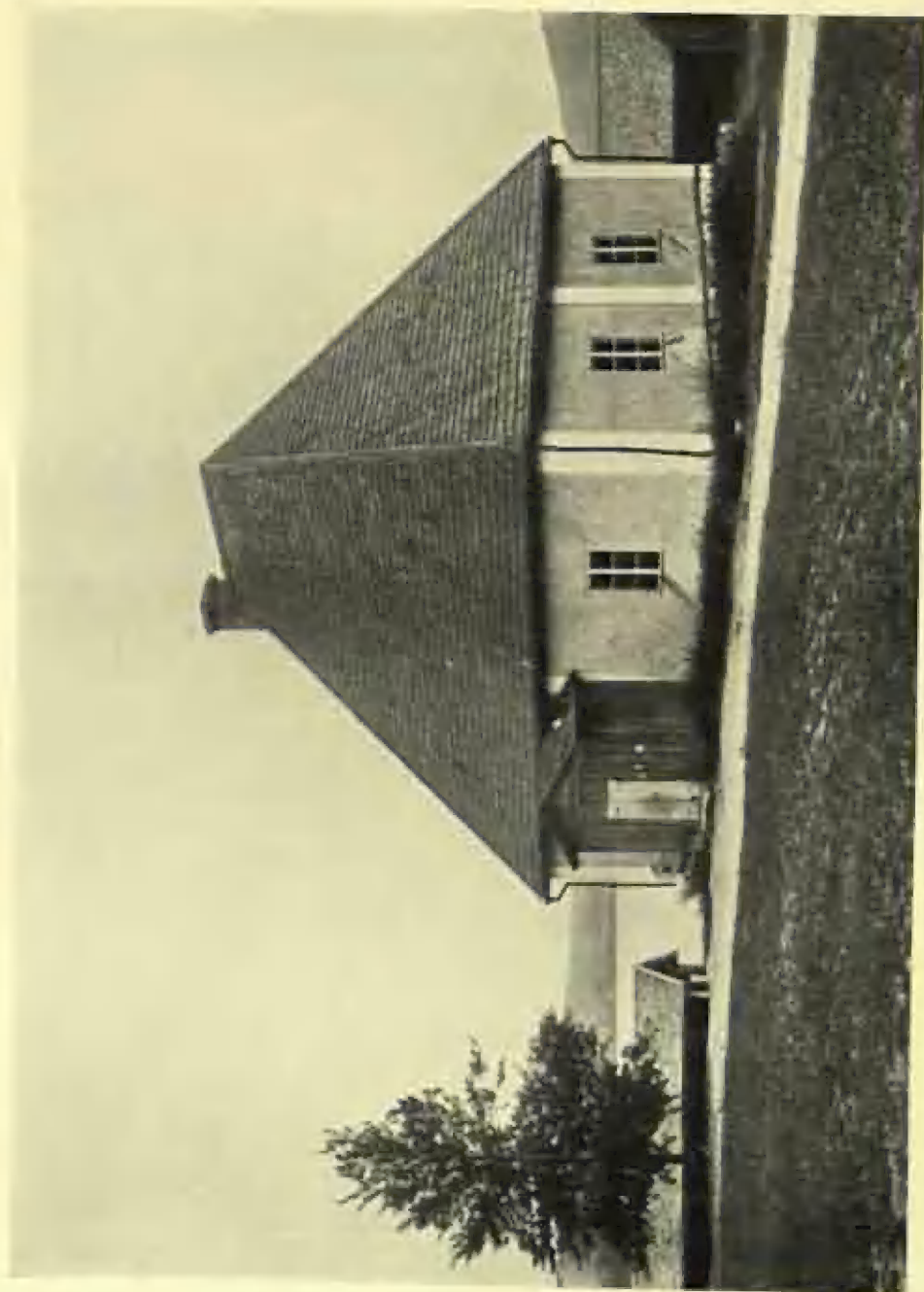
FIG. 1. A TRADITIONAL MEETING PLACE OF THE 'THING', WEST SWEDEN



FIG. 2. STONE CIRCLE IN SHIP FORM AT BLOMSHOLM, BOHUSLÄN, SWEDEN

facing p. 332

PLATE III



17TH CENTURY COURT HOUSE, SVÄRDSJÖ, DALICARLJA, SWEDEN
P. T. Gerbman, Hedensten

SCANDINAVIAN THING-STEADS

Many documents record that Things were held at the church-villages also in more densely populated provinces. The church may have been built on the site of an earlier pagan centre of worship ; many parish names clearly indicate a connexion with pagan rites. Sometimes the Things were held close to the church itself, but more often in some convenient place in the neighbourhood. If there was a grave-mound at hand, it was made use of ; if not, a grove of trees, a meadow, a heath, etc., was made to serve.

The Swedish bishop Olaus Magnus, in his *Historia de gentibus septentrionalibus* (1555), relates that places with a high and free situation, in the forests, were selected for Thing-steads, where the people



A 'THING' UNDER OPEN SKY

From '*Historia de Gentibus Septentrionalibus*', by Olaus Magnus (1555).

assembled in large numbers for the Things. The appearance of such a Thing-stead under the open sky is shown by the cut reproduced here, from Olaus Magnus ; it is used by him as a heading for the chapter entitled '*De iudiciis et judiciis campestribus*'. This picture, probably the only one extant of a Scandinavian Thing-stead under the open sky, shows six men sitting on two benches, at right angles to each other, and two other men stepping forward to the six, and speaking eagerly. The six men evidently represent the court, which consisted of twelve members, and the two men are the litigants. Two trees indicate that the scene is laid out of doors.

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Descriptions of early Danish Thing-steads show an arrangement similar to the one described by Olaus Magnus. The court took their seats on four logs or planks, laid in a square, on stones. A large stone in the centre was called 'The Thieves' stone', because thieves were made to sit there while judgment was pronounced.

In England, too, the court in old times used to sit on four benches, arranged in a square, and what was done in court was done 'within the four benches'.⁶ This fact may perhaps indicate a Scandinavian influence.

In this connexion I may mention, with regard to Swedish and Norwegian stone circles, that the number of stones is very often twelve, a fact which has been brought forward as proof of the supposed judicial functions of the circles. As the members of the court were twelve in number, they were believed to have used the stones as their seats; but this hypothesis concerning the number of stones may be without value. However, it is highly probable that the stone circles were used as a barrier round the space reserved for the court. We have to imagine the court sitting within the circle, the people assembling round them. Such an arrangement, with the audience assembled round an open space, seems very natural, especially under the primitive conditions of antiquity. When some of the Swedish medieval laws state that a thief should be led to the Thing and 'to the Ring', no doubt such an arrangement of the Thing-stead is indicated.

It is evident that the open-air Thing-steads were often most unsuitable for their purpose, especially during the cold season. Nevertheless the custom of holding Things under the open sky was long retained in the Scandinavian countries. It was of course very difficult to find a suitable house for the numerous assembly.⁷ The custom of holding Things indoors first arose in the towns, where it was easier to provide suitable halls. But as the development in the towns shows many special peculiarities, this subject is better treated separately.

In the countryside it was natural that in case of inclement weather the Things were often removed to an adjacent church. This was expressly permitted in Iceland 'if the weather was inclement out of doors'. It also occurred in Sweden, as is shown by the fact that the

⁶ Cf. F. Pollock and F. W. Maitland, *The History of English Law*, 1, 556.

⁷ The laws generally required a certain number of men to be present at the Thing. Originally, it was probably a universal obligation to attend the Things.

SCANDINAVIAN THING-STEADS

Swedish archbishop in 1380 forbade the holding of Things in the country churches. When they could not be held in churches, they were moved to other houses in the neighbourhood. Sometimes there were near the churches so-called Parish Houses, which were made use of. Instances of Things held in Parish Houses are known from Sweden and from Finland during the 15th century. Several instances are also recorded of Things being held in the sextons' houses in Sweden, and probably the rectories were also made to serve for the purpose.

The earliest record of a Thing held in a house in Sweden is from the 14th century. During the 15th century, the Things seem to have been held indoors in a comparatively large number of cases but open-air Things did not cease; they still occur in modern times, although it is difficult to ascertain to what extent this custom survives.

In Denmark the custom of holding Things out of doors seems to have continued later than in Sweden; it was still general at the beginning of the 17th century. In Jutland the custom of holding Things out of doors was retained towards the end of the century. Only in case of inclement weather did the assembly seek the protection of a house in some neighbouring village.

During the 17th century Court Houses (plate III) began to be built in the whole of Scandinavia, and gradually the ancient custom of open-air Things disappeared. Sweden took the lead in this development: during the century just mentioned Things held under the open sky were exceptional.

In the towns the circumstances were essentially different from those ruling in the country districts. The towns were separate judicial districts, distinct from the rural divisions, and had a legal system of their own, mainly derived from German models. The court generally met indoors. Only in Denmark legal proceedings under open sky in the market-places of the towns seem to have been of general occurrence.

Already at an early epoch the towns became the sites of courts holding jurisdiction over a larger district (*landsting*, *lagting*). It seems probable that the court here often met indoors. Instances are known from the end of the Middle Ages, both from Sweden and from Norway. Room for the courts was found in Council Halls, Guild Halls, and Convent Halls. Special Court Houses were apparently not built during the Middle Ages.³ (See footnote on p. 336).

The review given here of the history of the Scandinavian Thingsteads does not claim to be exhaustive. My aim has only been to give

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a short survey of a field that has as yet been little investigated. Taking into consideration the proximity of Scandinavia to the British Isles and the constant intercourse between these two countries ever since the Viking Age, an account of Scandinavian Thing-steads would seem to be of some value also from the English point of view. While the English legal system in earlier times received impulses from various sources, the development in Scandinavia for a long time proceeded without being affected by influences from other countries. There can therefore be no doubt concerning the original character of the exterior forms of jurisdiction which have been spoken of here, a fact which enhances their value for other nations. Although of only peripheral interest for the science of law as such, these forms have a great interest for the history of civilization in general during a period when law and society were indissolubly connected.

* In the old Swedish diocesan city of Skara, the special Royal Courts at the end of the 15th century and the beginning of the 16th century met sometimes in the Town Hall, sometimes in the Guild Hall, sometimes in the vestry of the Cathedral, and sometimes in various Convent Halls. During the later part of the 16th century the important *landsting* at Viborg and Ringsted in Denmark had special houses erected for their use.

With regard to England, see Pollock and Maitland, *op. cit.*, 1, 555.

PLATE I



LINDOS, THE TOWN AND ACROPOLIS



THE ACROPOLIS OF LINDOS; ON RIGHT, A BYZANTINE CHURCH
PA, T, Ashby

Three Italian Archaeological Congresses

by THOMAS ASHBY

ITALY has been and still is the scene of unprecedented archaeological activity ; and it was not unnatural that this fact should lead to the holding of a succession of congresses during the Spring. Rome, as was only fitting, opened the ball on the 2628th anniversary of her birthday, the 21st of April, with the first national congress of Roman Studies.

Very wisely the organizing committee decided, as also did the Etruscan committee two years before, to regard this as a sort of preliminary canter to an international congress to be held, I believe, in 1930, the 2000th anniversary of the birth of Vergil ; and therefore to confine it in the main to Italians—though various foreign scholars resident in Rome were invited to take part, and several of them read papers.

The congress was divided into eight sections, and dealt with a wide variety of interesting topics, covering the whole field of Roman Studies from the origin of the City down to the present day, so that one often longed for the gift of ubiquity. The mere enumeration of these would occupy a considerable amount of space, and it is impossible, where most were important, and where many points of detail were touched upon, to single out any outstanding papers. It will therefore be better to await the publication of the transactions of the congress, and to take it meanwhile as an indication of the zeal and activity with which such studies are now being pursued.

The congress in Rome was immediately followed by the first international congress of Etruscan Studies in Florence. Here a better plan was followed, there being only five sections, not more than three of which (and generally only two) met simultaneously ; while for the more important papers, which were read in the Aula Magna of the University, the field was kept completely clear. The honour of reading the opening paper was given to Dr Randall-MacIver, who gave an excellent survey of the archaeological material of Etruria in relation to that of other parts of Italy during the Villanovan period, followed on another day by a similar survey of the period of Oriental influence by

Prof. Von Duhn ; while on the same day Prof. Trombetti read his paper on the interpretation of Etruscan texts.

Keen expectations had been roused by preliminary announcements of the importance of the discoveries which Trombetti had made, and especially by the fact that a considerable grant had been made to him by the Italian Government : but the net result, based mainly on his study of the Agram papyrus, may be best summarized in the words of one of the three speakers—all Italians—who took part in the discussion which followed. 'We are not here', he said, 'to celebrate a triumphant return to port, but to greet the dawn of a new day, which, we hope, may be fruitful in important discoveries'. Trombetti's book on the subject was published during the congress, and will doubtless be carefully examined and discussed by philologists and linguists.*

Among other papers read we may mention Prof. Von Bissing's scheme for the scientific study of oriental monuments and objects found on Etruscan sites (whether imported by Hellenic or Phoenician traders—a point still in dispute) which, like many other useful schemes, will be enormously facilitated if the hopes of the foundation of an international institute of Etruscan Studies in Florence, with its excellent museum, are realized. A paper by Prof. Ciaceri on the influence of the civilization of Magna Graecia on Etruria in the 6th century B.C.; another by the veteran Prof. Kubitschek on the disappearance of the Etruscan race in Roman times; Prof. Giglioli's account of the excavations in the necropolis of Veii, the report on which is eagerly awaited—and his paper on early Etruscan Sculpture; Prof. H. J. Rose's brilliant analysis of the relations between the Etruscan and Roman religions, in which he maintained that the basis of the latter was never seriously modified; a paper by Sig. Calzoni on a Bronze Age station near Cetona; and two others by a couple of local topographers, Padre Isolani and Sig. Raveggi, whose exact observation of the remains of roads and other monuments in the valleys of the Elsa and the Fiora will, as Prof. Ducati and the present writer (in his paper on the Roman road system in relation to the Etruscan) pointed out, be of great value to the archaeological survey of Etruria, so that their example deserves encouragement and wide imitation. Nor should we forget Senator Corrado Ricci's brilliant demonstration that the famous Chimaera of the Florence Museum, which was found at Arezzo in 1553, had already been discovered in the 12th or 13th century, and was buried again owing

* Reviewed by Professor Sayce on p. 378.

THREE ITALIAN ARCHAEOLOGICAL CONGRESSES

to the superstitious terror which it inspired and which may be observed even in the more enlightened minds of the 16th century.

At the closing meeting in Florence, honoured by the attendance of the King of Italy, Prof. A. Grenier read an excellent paper on Etruscan art and civilization in Rome; but the work of the congress continued next day at Marzabotto, where the site and the interesting museum were visited in detail, a whole long day being devoted to the purpose, not unwisely, inasmuch as the available time was curtailed by a violent thunderstorm at midday. Its labours were concluded at Bologna, where the museum was visited, and an excellent discourse delivered by Prof. Ducati (whose able assistance to Prof. Minto, the active President of the committee, did much to ensure the success of the congress) on Thomas Dempster and the birth of Etruscan studies. The posthumous work of Dempster was published in 1723-24, almost a century after his death, by the munificence of Thomas Coke, Earl of Leicester (the uncle of 'Coke of Norfolk') who was responsible for the foundation of the Holkham collection; and was thus rescued from the undeserved oblivion under which it still seems to rest, for it is not even mentioned by the writer of the article on Dempster in the *Encyclopaedia Britannica*. If we think how little attention had been paid to Etruscan antiquities during the early Renaissance (Ducati has pointed out that only one drawing of an Etruscan painting is to be found among the whole series of drawings in the Uffizi in Florence) we shall see that his claim to be the father of such studies is hardly exaggerated.

The practical results of such a congress, given the activity of its promoters and the probability of the foundation of a permanent international organization, are considerable. Among the problems indicated for immediate study were:—the Eneolithic and Bronze Ages of central Italy, the passes from Etruria over the main Apennine Chain and into Liguria, and the exploration of at least three inhabited sites (Cortona, Rusellae and Veii were suggested) which have so far not been sufficiently studied, attention having been mainly devoted to the cemeteries. The second volume of the *Studi Etruschi* appeared before the congress closed, while the third will contain reports of its proceedings. But the committee has also an ambitious programme for the publication of monographs on Etruscan sites and subjects: and if Prof. Ducati's large book on Etruscan art is to be regarded as a fair specimen, the series will be an excellent one.

The first Convegno Archaeologico Internazionale to be held in

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Rhodes formed an extremely pleasant sequel to the strenuous work of these two congresses, as it was a meeting at which no papers were read ! The hospitality of the Italian Ministry of Public Instruction and of the Governor of Rhodes was extended to some seventy or eighty archaeologists, among whom representatives of no less than ten foreign nations were included. The voyage from Brindisi to Smyrna was uneventful, but gave an extremely good opportunity of renewing old friendships and making new ones. The Italian representatives came from every quarter of the country, and one could really feel, after the journey had come to an end, that in the future one would be able to visit any of the large Italian centres of archaeology—or art—with the certainty of finding a friendly and kindly welcome.

Smyrna was reached just too late, unfortunately, to permit of a visit to Ephesus, but the newly founded museum was inspected. It is housed in an abandoned church, and contains a number of interesting works of art, mostly of the Hellenistic and Roman period, from a variety of sites in Asia Minor—Ephesus, Miletus, Pergamum, etc. The majority of them are already published, and a summary catalogue in somewhat barbarous French has recently been brought out. Some of the sepulchral stelai are of especial interest: and among the most recent discoveries is a replica of the well-known relief representing the visit of Dionysus to a dramatic poet or to Icarius, a copy of which is in the British Museum.¹

The next morning brought the party to Patmos, where no remains of the classical period are to be seen, and the following day to Cos, where a new museum has been installed in the splendid castle of the Knights; it is very well arranged, but contains nothing of outstanding importance. The inscriptions and sculptures which were used as building materials in the walls of the castle, and the group of cippi and columns used to support the branches of the famous plane-tree, which, if only indirectly, traces its pedigree from that under which Hippocrates once taught, have been wisely left as they were. A visit was also paid to the excavations of the Asclepieion, with its interesting temenos, containing buildings of several successive periods. The lowest terrace has a large open space surrounded by porticoes, in which were shrines, places for drinking the water of the sacred springs, and such like. On the middle terrace is the earliest sanctuary, as well as two temples of the Roman period; and on the highest the principal temple, erected in

¹ Reinach, *Rep.* II, 464.

PLATE II



THE TEMPLE OF AESCULAPIUS, COS; MIDDLE TERRACE
Pl. T. Ashby



THE TEMPLE OF AESCULAPIUS, COS; WALL ON LOWER TERRACE
Pl. T. Ashby

PLATE III



ROMAN BRIDGE, RHODES
Ph. T. Ashby



MEDIEVAL CASTLE, COS
Ph. T. Ashby

THREE ITALIAN ARCHAEOLOGICAL CONGRESSES

Hellenistic times, and surrounded by various subsidiary buildings. The excavations are now complete, and Prof. Herzog, who conducted them from the start, and who gave a description of them on the spot, is on the eve of publishing a full account of them. It was a short afternoon's voyage on to Rhodes, and here a full three days were spent. The museum, housed in the Hospital of the Knights of St. John, which has been well and carefully restored, contains many objects of exceptional interest, including all that have been found in the rich necropolis of Ialysos. There a number of Mycenaean dromos-tombs (14th to 11th centuries B.C.) have been found, containing fine specimens of pottery and some good gold-work. The site of this necropolis is a flat-topped hill; on the slopes below it, near the modern road, are the cremation necropolis of the geometric period and the inhumation necropolis of the Hellenic period. In the latter many of the burials are in pithoi or jars of various forms, while others are in sarcophagi formed of a number of slabs of stone. Many fine vases have been found in these tombs also, some of local or Ionic fabric, others imported from Greece: and in one of them, actually excavated in the presence of the Congress and dating from the end of the 5th century B.C., an alabaster disk was found, with a figure of a discobolus painted in red upon it.

The collection of classical sculptures is of considerable interest; the most attractive piece is undoubtedly the statuette of Aphrodite drying her hair after the bath. The group of circular funerary altars and the epigraphic collection are also worthy of notice. Remains of various buildings belonging to the city of Rhodes itself have been brought to light—traces of the city walls of the Greek period, when the city occupied a far larger area than it did under the Knights; remains of two temples, one of Aphrodite near the harbour and one of Athena Polias and Zeus Polieus on the acropolis; traces of the stadium and of an important network of subterranean aqueducts; a well-preserved Roman bridge and an interesting necropolis of the Graeco-Roman period with mausolea containing chambers and niches for cremations and inhumations.

But Rhodes was not founded until the end of the 5th century B.C. being laid out on a new plan,² perhaps with the streets fanwise. The earlier cities of the island were Ialysos, Cameiros and Lindos; to the first we have already referred, and it is worth recalling that Salzmann and Biliotti had already discovered in its necropolis the first known

² See F. Haverfield, *Ancient Town-planning* (Oxford, 1913) pp. 31-2.—Ed.

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tombs of Mycenaean age in 1868-71, before Schliemann had begun to excavate at all. The acropolis of the city (which has itself entirely disappeared) occupied the Monte Fileremo, a plateau nearly 1000 feet above sea level, reached by a delightful path over the wooded northern slopes of the mountain. The position was one of exceptional strength, commanding a view of both seas. From it the whole island spreads out like a pear to the south, and it was the first point to be seized both by the Knights of St. John and by Suleiman the Magnificent in their attacks upon the city of Rhodes itself. Some of the towers of the Knights' castle are still standing; but, with two exceptions, no ancient buildings of any importance have as yet come to light.

The first is the temple of Athena on the summit, much ruined by the construction upon it of a church and cloister, the work of the Knights. It is the third as we see it, going back to the 3rd and 2nd centuries B.C.; but votive objects have been found going back as far as the 9th century B.C., showing that the worship of Athena was here superimposed upon some pre-Hellenic cult. Among the votive objects were numerous small bronzes, including more than 2000 fibulae, the largest known collection in the Graeco-Oriental region.

The other building that is preserved is the monumental fountain on the southern side, which has been carefully restored. It has a Doric portico in front of the basin, from which water still gushes out abundantly. It may belong to the 4th century B.C., since it closely resembles the fountain of Peirene at Corinth.² At Cameiros the necropolis had been thoroughly ransacked, and the objects found in it divided between the British Museum and the Louvre. No monumental remains are to be seen on the site, and it was therefore not thought worthy of a visit.

Lindos, on the other hand, the scene of explorations by Danish archaeologists (the results of which are unfortunately not yet published) is a most striking site: it has remains of considerable importance. In the lower town, occupied by the modern village, there are remains of a theatre and of other buildings; while the acropolis dominates the whole of the west coast of the island, and was therefore selected by the Knights as the site of one of their castles. Within the fortifications excavations have brought to light considerable remains of the famous temple of Athena Lindia. The temple itself was not a very large building, but

² See *Guide to the Excavations and Museum of Ancient Corinth* (American School of Classical Studies at Athens) pp. 50 sqq.

THREE ITALIAN ARCHAEOLOGICAL CONGRESSES

was approached by great flights of steps and had imposing propylaea. The view from the summit of the acropolis is magnificent. Below the sheer cliffs on which it stands is the little harbour in which, as the legend has it, St. Paul disembarked when he touched at Rhodes on his voyage from Miletus to Tyre.⁴ A large quantity of votive objects have been found at the foot of the cliffs.

The whole excursion formed a fitting conclusion to a memorable visit, under most favourable conditions, to one of the most beautiful islands of the Aegean.

⁴ Acts, xxi, 1.

⁵ Recent archaeological discoveries in the whole group of the Dodecanese are well described in the first volume of *Clara Rhodos*, the organ of the newly founded Institute of History and Art of Rhodes, which was inaugurated during the Convegno.

Notes and News

EAST ANGLIAN FLINTS

We have received the following criticism and print Mr Warren's reply. Mr Warren tells us that he has deliberately avoided the discussion of wider issues.

We print Mr Sainty's letter exactly as we received it; but it is incorrect to describe Mr Warren's views as unique; they are also held by many others.

SIR,

In the review by S. H. Warren of *The Antiquity of Man in East Anglia*, there appears on page 252 the following:—'A few years ago a neolithic implement derived from the surface soil came down nearly to the level of the beach, in a mixed sludge-stream in the cliffs at Side-strand—not an unusual occurrence. Shortly after the discovery the reviewer examined the site very carefully. This becomes a 'flint implement of Early Palaeolithic-Chellean type from Lower Glacial Clay'.

This statement is definitely untrue. The implement was found by me *in situ* in undisturbed Till at a height of five feet above beach level. A heavy northerly gale had caused extensive erosion, removing immense quantities of the softer deposits of the overlying Contorted Drift, and leaving the tough masses of Till exposed as isolated promontories, rising almost vertically from beach level for a height of over nine feet. The Till contained fragments of wood and bone and many flint pebbles, which, like the implement, are stained with the very characteristic purple-black, typical of the freshwater deposits of the Cromer Forest Beds, from which they have been derived by glacial action. Mr Warren did not visit the district until five months later, and any field-worker familiar with the north-east Norfolk coast will realise the changes that five months of erosion effect in this particular area.

With regard to the classification of the implement, Mr Warren's unique views on flint fracture have been so trenchantly and devastatingly exposed (*Geol. Mag.* April 1921; *Man*, April 1923 and Aug. 1923) that it need cause no surprise that he considers the specimen 'neolithic'. However, every expert who has examined it—the Abbé Breuil,

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M. C. Burkitt, the late W. G. Clarke, Reid Moir, and Reginald Smith among them—has unhesitatingly allocated it to Early Chelles.

I must ask you of your courtesy to publish this in the next number of *ANTIQUITY*.

J. E. SAINTY, B.Sc.

Vice-President of the Prehistoric Society of East Anglia

From Mr Warren :—

I am greatly obliged to the courtesy of the Editor in sending me the remarks of Mr Sainty.

It is unfortunately not possible to put the clock back and replace the Sidestrand specimen into its original position for re-examination. But at the time of my visit I had a precise description of the site of the discovery, particularly of its position relatively to the small temporary promontories along the foot of the cliff. The correspondence of these details enabled me to be assured that no change sufficient to affect the evidences had taken place since the discovery.

The whole footing of the cliff was composed of material churned up by slipping on too large a scale to have been changed so quickly without being noticed : it was quite obviously not a recent fall. If it had been a recent fall we should have been told so at the time, as it was an important visit by the Geologists Association.

I have myself made too many startling discoveries of modern objects involved in geological formations by movements of the ground not to realize how difficult it is to avoid these mistakes.

I formed my own independent judgment only after fully weighing the whole associated evidences in the light of general experiences : the form and technique and the mineral condition of the implement, and the character of the site and the deposit. Even the undamaged freshness of the implement, although it may be readily matched in fractures made in or under the ice, is scarcely to be expected in a derivative obtained from an ancient pre-glacial surface soil or deposit.

SOIL-MAP OF EUROPE

The progress of soil research, especially perhaps in Russia, during the last few years has been a remarkable fact of science. Advance has been made from classification by material (sand, clay, loam, etc.), and by utilization (potato-land, beetroot-land, etc.), and by colour (grey, red, brown soils) to an attempted classification on an evolutionary

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basis, distinguishing steppe-soil with only humus over the country-rock from woodland-soil with, typically, an iron-containing layer between the rather pallid humus, the soil-surface of the country-rock beneath. A map of the soils of Europe on the scale of 1 to 10,000,000 with notes has been issued from the Danzig Polytechnic (Prof. Stremme) and is being prepared for English readers by Dr Ogg of Edinburgh, but the attempt is now in progress to make a more detailed map with a more elaborate classification on the scale of 1 to 2,500,000, and in this the attempt will be made to indicate not only the evolutionary forms but also the age of the soil. The vertical section of the soil is being more and more considered and technique is being elaborated. When we realize how the distribution of the loess, as given us in preliminary maps, interprets at once so many distributions and interrelations of prehistoric cultures, especially of the Bronze Age, in Central Europe, we can look forward to the promised new *Bodenkarte* as likely to help very greatly in the reconstruction of social-cultural evolution that is the goal of prehistoric study.

A note on the subject will be found in *Forschungen und Fortschritte* (Berlin, Unter den Linden 38 ; vol. iv, p. 163, 1 June 1928).

H. J. FLEURE.

WEDDING STONE-CIRCLES IN BALUCHISTAN

Sir Denys Bray writes :—

The note on Stone Monuments of Baluchistan in the March number of *ANTIQUITY* (p. 90) contains a quotation from my *Baluchistan Census Report*, 1913: 'There are everywhere [in the Brahui country] circles of stone called *chap-jahi* or dancing-plots, which mark the sites of frequent dances of some wedding procession'. And the question is put whether these words 'record a fact of modern occurrence or a legend attached to the stones'.

They refer to current work-a-day custom among the Brahuīs, that interesting people of the Baluchistan frontier who speak a Dravidian language in about the last part of India where a Dravidian language might be expected. Several references to the custom are given in my *Life-history of a Brahui* (Royal Asiatic Society, 1913). Thus § 115 :—

'But if the two houses are some marches apart, the groom's father will send the *arti* on ahead, letting them know on what day he will himself follow with his company. Then must he set to work ; for the *hinnam* has to be duly performed, and there's feasting of his friends and

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kin, and the dancing and all. And when the time comes, he sets out with his company of riders. And ever and anon they halt by the roadside, and dance for the space of an hour or so. And on the place where they dance, they set a circle of stones as a memorial thereof. Such *chap-jahi*, or dancing-grounds, you may see along any road in Jhalawan. So they reach the house that has been set in readiness for them. And here a hearty welcome awaits them, and a jocund dance and a goodly feast for one and all. And the father of the bride makes no long tarrying, for he too has performed the *hinmam* betimes. So there's nothing to hinder them from celebrating the marriage the very night after the groom arrives'.

DOLMENS OF CENTRAL FRANCE.

We received the following letter on this subject, which we sent to Vice-Admiral Somerville; his reply is printed below:—

Sir,

In reading the article on the great Dolmens of Central France in the current number of *ANTIQUITY* [June, pp. 147-60], I cannot refrain from challenging some of the figures put forward. To a civil engineer they are ludicrous, and one feels that the interest the general public takes in such articles will soon turn to derision in the face of such wild data.

I gather (to take one case only) that the capstone at Bagneux is 61×16 feet (p. 152) and that its weight is 86 tons (p. 158).

Then comes the statement that 3,000 men would be required to move such a weight with levers and rollers, and the talented author goes on (quite rightly) to wonder how on earth such a number of men could be recruited, and how, when available, they could have been clustered round the stone.

The fact is, of course, that this figure is wholly fallacious. One will suppose that a race with sense enough to use rollers and levers would also be sufficiently reasonable to lay down timbers or tree trunks over which their rollers could pass. In such case, a ton of stone can very easily be moved by two men with 5' levers—not 30 or 40 men as your correspondent avers. I do not theorize in the matter as the business of moving 2 and 3 ton blocks of stone on rollers is one in which I am commonly engaged.

In this way 172 men would be required to roll the block, not 3000. Again, on p. 159 we come to the statement that 'logs of wood

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would be crushed like match-wood if used as rollers'.* Now, in a 60' stone, rollers could be put in every 6'. We thus have 10 rollers each as wide as the stone (16'). This gives as the total length of rollers 160' or 1920 inches. The rollers would be rough and irregular and would certainly have $\frac{1}{4}$ " bearing. The total bearing area would be 480 square inches. Now, Molesworth gives 6,000 lbs. as a minimum figure for the weight required to crush 1 square inch of oak. We thus require 2,880,000 lbs. to crush our rollers. But the stone only weighs some 200,000 lbs.—less than one tenth of this amount gives a very useful factor of safety of 10.

In other words, a couple of hundred men with 5'-6' levers and 10 wooden rollers each 16' long would have made hay of the job and if your correspondent disagrees he should have a talk with a quarryman.

As one who has had to move stone and steel aggregating many thousands of tons in wild countries where nothing but the roller, the rope, and the lever were available, the phrase (p. 159) 'We are in the presence of a mystery' is only cause of derision.

Too often the public look at ancient monoliths in an awe-struck manner and tell their children 'No-body knows' when they are asked how the stones were put up. When, perhaps within a mile or two, men are doing just the same thing with just the same tools!

May I conclude by saying that I very much appreciate ANTIQUITY and wish it every possible success. But I trust you will pardon me when I say that wild statements such as those published in the article I have quoted cannot well advance our knowledge of the work the people of old times did so thoroughly.

T. H. CLARKE.

From Vice-Admiral Somerville:—

Your correspondent bases his derision on at least two misreadings of my paper on 'Two Great Dolmens of Central France'. They are as follows:—

(1) In the second paragraph of his letter he quotes me as having stated 'that the capstone at Bagneux is 61 × 16 feet (p. 152), and that its weight is 86 tons (p. 158)'.

If he will again read page 152, and if he will look once more at my plan of the Bagneux dolmen on p. 154, he will see that 'the roof is formed of *four* capstones (not one single capstone) each about 2 feet thick', and on the same page that 'the *interior space* covered by the

* 'rollers of logs would be crushed into match-wood' (p. 159, lines 1-2)—Ed.

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four capstones is 61 feet long, about 16 feet wide, and from 8 feet 6 inches to 9 feet high '.

Mr Clarke has confused these dimensions of the interior space of the whole dolmen with those of the single western capstone, which actually measures 23 feet by 23 feet by 2 feet 4 inches of thickness.

It is this single stone that weighs 86.06 tons—a figure arrived at on the assumption that 1 cubic foot of the calcareous rock of which it is composed weighs 156½ lbs.

This confusion of figures has led Mr Clarke into several miscalculations as to the space available for placing rollers under the block, for manning levers, and in regard to crushing surface.

That is his first misreading.

(2) Even greater miscalculation as to man-power results from what I can only presume to be Mr Clarke's lack of knowledge of neolithic implements.

In the third and fourth paragraphs of his letter he derides my figures as to the number of men required to move the 86 ton capstone. If he will read my remarks on page 158, lines 10 to 17, and if he will also visit the nearest museum possessing specimens of neolithic implements, he will see that it was a matter of impossibility in those ages to hew down oak-trees, or any sort of trees of a size suitable to be used as levers, rollers, or for a log-way along which to transport so great a block of stone.

They had not then the steel axe, saw, and adze, nor had they the ropes which were available to Mr Clarke in the present day, even in the 'wild countries' of which he speaks, by whose means he has moved 'many thousands of tons of stone and steel'.

Even if provided with these modern implements, and accepting Mr Clarke's figure of '172 men' to move the 86 ton block, it is somewhat difficult to see how that number are to be disposed around a boulder measuring 23 feet square.

It would indeed be an interesting sight to see 'a couple of hundred men with 5'-6' levers' making 'hay of the job'.

(3) It is true that on p. 158 I spoke of the possibilities of transportation of the block 'along a rough road' aided by levers and rollers, only to show that the idea must be dismissed. It was, indeed, a fairly large assumption that neolithic man had knowledge of the functions of levers and rollers. My figures as to man-power under such assumptions are derived from those given by the late Mr E. H. Stone in his book on 'Stonehenge' to which I refer on p. 158.

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Although he (like Mr Clarke) was a civil engineer, I do not regard his figures as authoritative, but they are at least credible, and are within the experience of anyone who has had to do with men moving heavy weights in adverse circumstances. They are as follows :—

Effective strength for a short, direct, vertical lift, 224 lbs.
(1/10 ton).

Effective weight on the end of a lever, 112 lbs. (1/20 ton).

Effective pull in hauling a rope, 56 lbs. (1/40 ton).

According to the above scale, as will be seen, it takes 20 men with levers to move a ton. Mr Clarke says 'two men'; but is, of course, thinking of a smooth 'tramway' of logs, over which the rollers will pass with little friction. At the same time he appears to be forgetting that (in the case of the Bagneux capstone) the 86 tons mass has to be raised and placed on the rollers. Perhaps that, too, may be considered as 'hay-making'?

Then I envisaged the possession of hide ropes (also a large assumption) with which, according to the above scale, it takes 40 men, hauling, to move one ton.

My statement (p. 158) was 'at least 30 and probably 40 men to move one ton of rock along a rough road', and if 86 tons be multiplied by 40 (=3440), my estimate of 3000 man-power for the moving of the great capstone of Bagneux cannot be considered as excessive, especially having in view the possibility of the road not being flat, so that up-hill strains, and down-hill restraints would need to be allowed for.

(4) In paragraph 6 of Mr Clarke's letter he finds fault with my statement that logs of wood 'would be crushed into match-wood' if used as rollers under the 86 ton block.

The figures he quotes from Molesworth's Tables—which I cannot, of course, dispute—refer, I presume, to simple 'static' crushing weight; but directly the block of stone began to move (if it was possible to move it at all) over rough ground, the result on the rollers would certainly be their rapid reduction into match-wood.

I believe this would be the case with oak, or with any kind of timber, and until someone attempts the experiment, and disproves this statement practically (Mr Clarke, for example) I, for one, shall continue to hold the above opinion.

And I still contend that in considering the problem of the quarrying, transportation, and lifting into position of the four capstones of Bagneux by neolithic man 'we are in the presence of a mystery'.

THE EVANS COLLECTION

Sir Arthur Evans has presented to the Ashmolean Museum, Oxford, the magnificent collection formed by his father, the late Sir John Evans. This was the basis of Sir John's two classic works on Stone and Bronze Implements, and it is therefore intimately connected with the beginnings of scientific archaeology. We give below the substance of Mr Thurlow Leeds's remarks in the Annual Report*, so far as Britain is concerned; and we hope later to quote from the sequel which deals with the continental section. For permission to do so we are indebted to Mr Thurlow Leeds, who has succeeded the late Dr Hogarth as Keeper of the Ashmolean.

'*Neolithic.* In point of chronology many of the specimens belong more properly to the early part of the Bronze Age. Together with those of true neolithic date, they formed the basis of the earlier part of Sir John Evans's volume on the *Ancient Stone Implements of Great Britain*. There are axes from all parts of England, from Ireland, and a few from Scotland of almost all known varieties, including at least two hoards of associated implements. One outstanding specimen is an axe of polished nephrite (?) from Daviot, Inverness, possibly an import from Brittany. Noteworthy are several discoidal flint knives with ground cutting-edge; two fine flint daggers from Lincolnshire and Cambridgeshire; many perforated axe-hammers, and no less than three of the rare cylindrical cushion type from localities so widely separated as Sutton Coldfield (Warwickshire), King's County (Ireland), and Caithness (Scotland).

'*Bronze Age.* This is one of the principal divisions of the Evans Collection, since it contains a large part of the material round which the classic work on the *Ancient Bronze Implements of Great Britain* was written. Even after its publication in 1881 many specimens of prime importance were added. As an example may be taken two rapiers, one of Irish type found at Crediton, Devon, with a large palstave, an abraded counterpart of which from the same mould comes from Dawlish in the same county. The main portion of the collection is too well known from Sir John Evans's work to need recapitulation. Stress should, however, be laid on the bronze-founders' hoards from Barton Bendish, Burwell Fen, Felixstowe, and the Isle of Harty, and on a smaller personal hoard from Wallingford, the last affording a British parallel

* Report of the Visitors of the Ashmolean Museum, Oxford, 1927, pp. 17-20.

(A few verbal alterations have been made, to suit the present context.—Ed.)

to the hoard from Fresné-la-Mère (Calvados). Continual traffic with the Continent accounts for Gaulish implements from the southern counties, and the source of the Calvados torc is illustrated by a superb series of Irish gold objects; two "lunulae" of the early Bronze Age, armlets, so-called brooches, one fine example with large cupped terminals and several of the smaller "leech" variety, including a group of three of different sizes found with a socketed axe near Belfast, and finally ring-money from Ireland and England. From Ireland also come moulds for casting implements and three bronze trumpets.

By way of balance to this wealth of metal products, the Museum has received important accessions of British Bronze Age pottery. Beakers from Suffolk and Dorset, and an incense-cup with triangular perforations in the upper part of the walls, are part of the Evans Collection, while Miss Marsh's gift comprised a small cinerary urn and several small food vessels from Northants, one a highly decorated example of a form common in Yorkshire (*Proc. Soc. Ant.*, ser. 2, xxvii, 123, fig. 5), and above all a very remarkable beaker from Harston, Leics., on which a rusticated effect has been produced by pinching up the clay into vertical and horizontal ribs.

Late Celtic. This British section, hitherto never strong, shares in the impulse given to the Continental Iron Age series by Sir Arthur Evans's generosity. The principal early pieces are two La Tène I fibulae, one from Bridlington, Yorks., accompanied by two ring-fibulae, the second from Redmore, St. Austell, Cornwall (see *Arch. Camb.*, lxxxii, 77, fig. 18 c), and weaving-combs from Lancing (?), Sussex. With these must be reckoned two small pots and the upper stones of two beehive querns from Northamptonshire, presented by Miss Marsh, a cremation-burial in a cordoned vase from Cambridgeshire (Evans Collection), as also a fine bronze terret with scroll design filled in with red and blue enamel from Suffolk, purchased from the Fenton Collection.

From the same source comes a dragonesque fibula found at Lakenheath (*V. C. H. Suffolk*, i, 271 and plate), a beautiful piece illustrating the Celtic survival after the Roman Conquest, a survival which the Evans Collection strongly supports with similar, but later, fibulae from Braughing, Herts., and Brough, Westmorland (the latter enamelled), some remarkable specimens from Cambridgeshire of types akin to the Aesica brooch, besides numerous well-known Celto-Roman forms. To the further survival into Saxon times a bird-shaped hook and an enamelled roundel, both mounts of bronze bowls, also from

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Cambridgeshire, bear witness. The Celtic art of Ireland too is represented by numerous ring-headed pins, typical ring-brooches, and by the bronze finial of a drinking-horn, terminating in an animal's head in the style of the monsters of the Celtic manuscripts. The eyes are set with blue-glass studs, the cheeks with yellow enamel roundels decorated with a stepped cross set with black and white chequered enamel, and the jaws with panels of yellow enamel, altogether a very striking work.

'Anglo-Saxon.' To the collections formed by his father and presented by himself in 1908, Sir Arthur Evans has added several important objects: a tall, conical, green glass beaker from Faversham; pottery urns from Suffolk cemeteries, three of them clearly the work of one potter; and above all a large bronze bowl, from Stowmarket, Suffolk, with drop handles and open-work foot similar to specimens found in Kent (cp. Baldwin Brown, iv, pl. cxiv, 4 and 5), all foreign imports, probably from the Rhine district.

'With Miss Marsh's gift came two cinerary urns from Rothwell, Northants, one decorated with bosses and stamped patterns; a series of bronze cruciform brooches, three pairs and a large, late sixth-century example; an armlet and other smaller objects.'

'The interesting bucket-mounts with human masks (Baldwin Brown, iv, pl. cxiii, 4) found at Souldern, Oxon., in 1844, have been added by purchase to the local collection.'

'Two magnificent gold torcs of Viking date from Ulceby, Lincs., form part of the Evans gift. The larger is plaited from several strands of thick wire, and terminates, as does the smaller twisted example, in round loops. A twisted gold armlet from Brightlingsea, Essex, belongs to the same period.'

ROMANO-BRITISH TOWNS

The plan opposite p. 354 is evidence of the excellent work being carried out by our own excavators. We wish it were possible to do more than merely give the 'address to which cheques should be sent', but this little we do most gladly:—

Colchester: The Excavation Committee, The Museum,
Colchester.

Caerleon: The Excavation Committee, Lansor, Caerleon,
Monmouthshire.

Richborough: The Excavation Fund, c/o W. G. Klein Esq, F.S.A.,
7 Eldon Road, Hampstead, N.W. 3.

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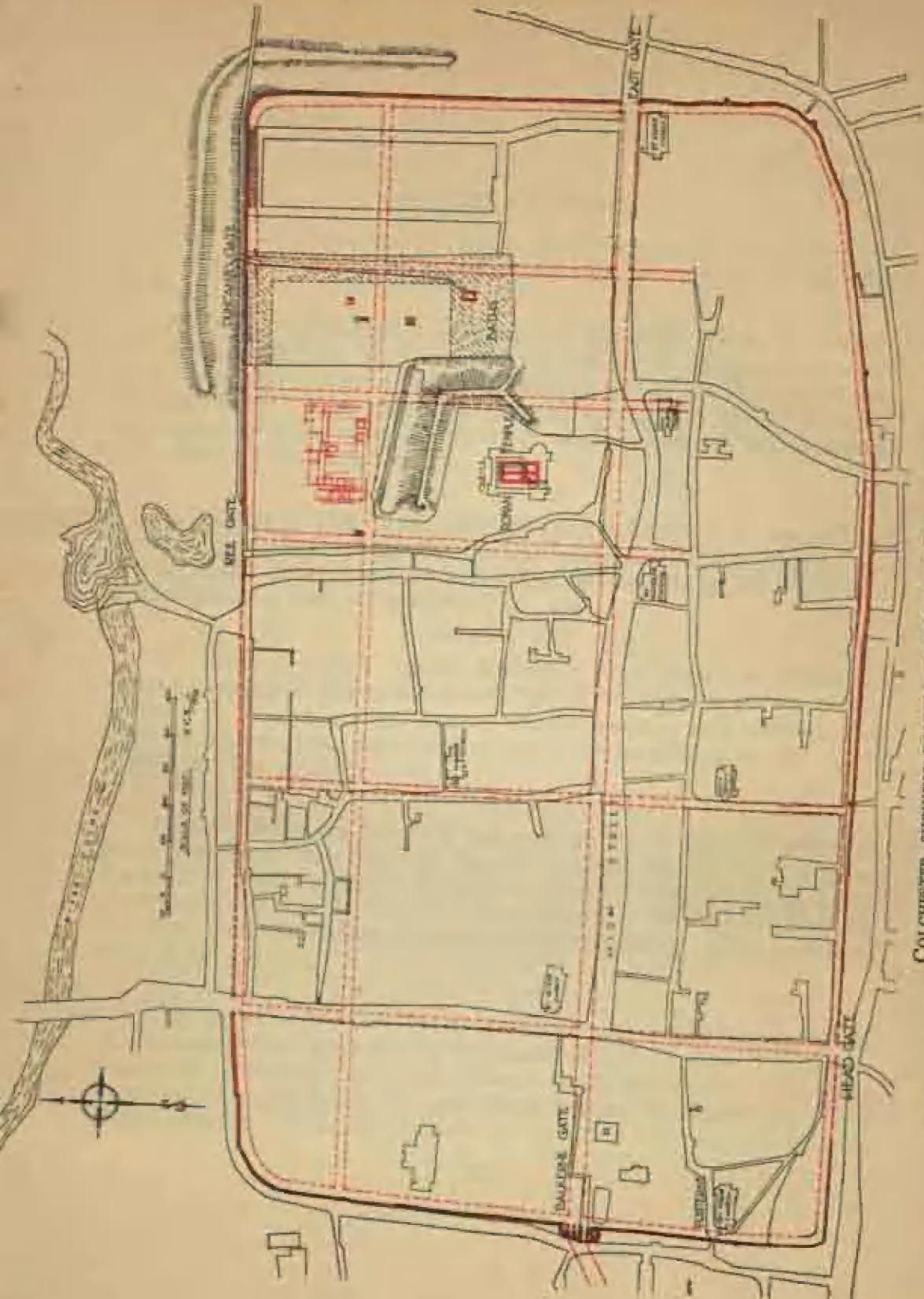
Colchester was called Camulodunon in pre-Roman times, when it was the capital of Cunobellinos, better known as Cymbeline. A 'colony' of veterans was established there during the reign of Claudius, and the new name Colonia Claudia Victricensis imposed, but it could not oust the old one. The newly-founded 'colony' was destroyed by Boudicca in 60 A.D. The city was then laid out afresh on a larger scale.

The present need is most urgent. The area available for excavation is indicated on the plan. It will only be available however until next February, when it is to be laid out as a sports ground. Between now and then work can be carried on continuously, but the number of men employed depends entirely upon the amount of money received. At present the results of a widely circulated appeal only justify the employment of three men. The area in question is the last open space in the town, and is known to contain some most important buildings. The buried ruins of the Forum probably remain intact to a height of 15 feet. The Excavation Committee includes distinguished representatives of the town itself and of Roman studies; and their public-spirited action deserves the widest possible support.

In the last volume of *ANTIQUITY* (vol. 1, opp. p. 344) we reproduced a plan of Caerleon which was circulated with last year's appeal. This year's plan, now in circulation, shows the results obtained in the interval. They are most encouraging. We would remind readers that here also excavation—and immediate excavation—is essential, since the site is destined for building on, after which no further knowledge of the Roman remains will be obtainable. The new plan shows the barracks laid bare in the western corner, the completed plan of the amphitheatre, and the beginnings of the outer ditch-system.

At Richborough work has been in progress since 1922. The work is directed by Major Bushe Fox and Mr W. G. Klein, on behalf of the Society of Antiquaries of London. The plan of the site grows in interest and complexity; the most interesting feature at the moment is, perhaps, the great camp of Claudian or even earlier date. (*The First Report*, by Major Bushe Fox, was published in 1926 by the Society of Antiquaries, price 7s. 6d.).

We do not apologize for giving publicity to these appeals—far from it. We are proud to be in any way associated, however indirectly, with work of this kind.



COLCHESTER, SHOWING PROBABLE NUCLEUS OF ROMAN STREET-PLAN.

The area indicated by hatchings to the north-east of the Castle is that which forms the subject of the recent appeal

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

An ancient rectangular enclosure on Banstead Heath, in Surrey, has been trenched by Mr S. E. Winbolt and Dr W. Hooper, the earthwork being one of a group of three near the site of the Roman villa on Walton Heath. It is suggested that the earthworks served as cattle enclosures for a Romano-British ranch, with the villa as headquarters. (*The Times*, 5 June 1928, p. 13).



In a letter to *The Times*, 28 May (p. 15) Mons. J. C. Peristianes presents some interesting details and opinions with regard to the bronze statue of the Emperor Septimius Severus which was illustrated in the June number of *ANTIQUITY* (p. 220).



Dr Einar Gjerstad reports finding a royal palace at Voumi in Cyprus dating from the end of the archaic to the beginning of the classic period. It is 100 metres square. Many statues and statuettes of stone and terra-cotta, dated 700 to 450 B.C., have been found. (*The Times*, 30 May, p. 12)



A communication has been received by the Roerich Museum in New York from Prof. Nicholas Roerich stating that the Central Asian Expedition, which under his direction started from Sikkim in 1924, has returned to the Himalayas. The expedition met with great difficulties but Prof. Roerich reports 'many scientific results'. (*The Times*, 28 May, p. 9).



The report of Mr Guy Brunton on the work of the British School of Archaeology in Egypt during the winter of 1927-8 shows that settlements and cemeteries of an earlier date than any previously known have been found in the desert between Naga Wissa and Khawaled, in the Badari district. Some 250 burials have yielded fine pottery and other

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objects which illustrate the arts of an epoch hitherto little-known. Among the more important finds are a vase of basalt—the oldest stone vase known from excavations ; necklaces of Red Sea shells, and stone and ivory beads ; an amulet seeming to represent a hippopotamus and if so the earliest figure of that animal. Large numbers of flint implements, polished stone-axes, and fragments of beakers were found in the settlement sites. Grain occurred frequently : the Badarian date cannot be questioned and this find is important as early evidence of agriculture. The cemeteries discovered were of the pre-dynastic, first intermedial, and early Christian periods. In the graves were toilet vessels, scarabs, bead necklaces, button-amulets and other charms, some being of gold. Provided funds are forthcoming a further expedition will continue research during this next winter. (*The Times*, 26 May, p. 11). Mr Brunton has promised us a paper on the Badarian culture.



During this season's work in Syria a Hittite stele of basalt representing the god Teshub has been found at Tell el Ahmar (12 miles south of Carchemish). The ruins of an Assyrian palace believed to date to the time of Tiglath Pileser have been discovered in the district. (*The Times*, 30 June, p. 13).



The British Academy Expedition in Constantinople has uncovered the ruins of an elaborate building, with walls some 20 feet high built of brick but in part of ashlar blocks. In the course of excavation three large pedestals for statues were found : one inscribed in Greek 'Hecuba'. No other statue of Hecuba is known. Another pedestal is inscribed 'Aeschines'. A large quantity of Byzantine wall-tiles were found, a discovery of much interest as the existence of Byzantine mural ceramic has hitherto been doubted. (*The Times*, 4 July, p. 15).



Major A. G. Wade communicates to *The Times* (4 July, p. 12), the discovery of a Roman site at Wivelrod, Bentworth, Hants. With Mr C. H. Curtis, Curator of the Alton Museum, he excavated in two hours 'the finest collection of Roman jars and sherds it has ever been my lot to recover in so short a time'.



Dr R. Campbell Thompson reports on the excavations on the site of the Temple of Nabu, at Kouyunjik, during the winter of 1927-8.

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He and his colleague Mr R. W. Hutchinson are now able to say that the Temple extended over an area about 180 feet by 160, the main chambers being built on a platform varying from 25 feet to 60 feet wide. Pieces of sculpture of Ashurnasirpal (883-859 B.C.) were found. The pottery includes fine white ware, usually wheel-made, with designs in matt or slightly lustrous black paint, both designs and fabric pointing (it is claimed) to the Mesopotamian extension of the Proto-Elamite culture of Susa, as found at Ur, Abu Shahrain and Tell el 'Obaid. In digging below the Temple pavement the walls (still three feet high) of an outer chamber of a palace of Ashurnasirpal and his son Shalmaneser, with inscribed bricks still in place, were found. This gives a clue to the position of one of the earlier (9th century) palaces of Nineveh. (*The Times*, 9 July, p. 15).



An expedition promoted by the Norwegian State Exploration Fund and other scientific institutions is investigating, under Dr A. W. Brøgger, Professor of Antiquities, Oslo University, the antiquities of the old Norse settlements, chiefly in the Shetlands. It is stated that it is intended to carry out excavations later on in co-operation with Scottish archaeologists. (*The Times*, 18 July, p. 13).



Excavations on the site of the Roman cemetery at Walls Field, Baldock, Herts., which have been in progress since 1925 under the direction of Mr W. Percival Westell, the Curator of the Letchworth Garden City Museum, were resumed during March-April last, when the east side of the cemetery was uncovered. In the five parallel trenches dug there were 93 burial groups, varying from single burials to groups of seven. Much coarse pottery and Samian ware, of first to third centuries, was found, and 18 potters' name-stamps are recorded. Other objects include 2 perfect thumb pots, a necklet of 45 glass beads gilded, and an ornamented bronze stylus. Only one coin, of Vespasian, was found. A detailed report is printed in *The Times*, 30 July (p. 17).



The East African Expedition to Kenya Colony, which made important discoveries in the Nakuru-Elmenteita district during 1926-27 will resume its work this autumn under the direction of Mr L. S. B. Leakey, who has published in *The Times*, 1 August (pp. 15-16) an article on the earlier work of the Expedition and the plans for this next season. In his article Mr Leakey discusses the origins of *Homo sapiens*,

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but we must wait the full published report before criticizing the very attractive theory put forward.

Excavations financed by the University of Gröningen have been in progress this year at Dömsöd, on the Danube, just below Buda Pest. The site was previously celebrated for discoveries of bell-beakers. This year a Middle Bronze Age cemetery (urnfield) has been explored. Excavations at Tószeg, financed last year by Cambridge University Museum, were carried out in the spring with Dutch help. The site, on the Tisza (Theiss) in Eastern Hungary, was occupied throughout the Bronze Age. The most important recent discovery was an Early Bronze Age house. (*Berliner Börsen Zeitung*, 24 May).

The Reverend E. H. Goddard, F.S.A., writes to point out an error on p. 229 of the last number. The total number of coins found at Chute was 65; of these the British Museum kept 29, the Royal Mint kept 4, and 32 were sold to Captain Cunningham.

In a megalithic burial-chamber at Drumholm, county Donegal (Ireland), recently dug into by Mr H. Morris, there were found 'immediately under the surface sod. . . over forty white rounded stones, varying from the size of a gooseberry to that of a goose egg'. The name, formerly spelt Druim Tuama, means 'the ridge of the tomb'. (See *ANTIQUITY*, II, 90; Maguire, *History of the Diocese of Raphoe*, I, 384-414; *Derry Journal*, 30 April 1928).

To these instances of white stones found in graves may also be added that of a 'white quartz pebble triangular in shape' from a cist at Piekie Farm, Boarhills, Fife. (*Proc. Soc. Ant. Scot.* LXI, 1927, p. 43). The cist contained the skeleton of a beaker-man. The matter was fully dealt with by Sir Arthur Mitchell in a paper on 'White pebbles in connection with Pagan and Christian burials'. (*Proc. Soc. Ant. Scot.* XVIII, 286).

We are not amongst those who deplore the absorption of works of art by the museums and citizens of the U.S.A.—excluding of course such 'irremovable things' as buildings which cannot be torn up by the roots without being killed. The Museum of the University of Pennsylvania has acquired another magnificent wall-painting from China, where it was perishing in a ruined temple of the Moon Hill

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Monastery, Ch'ing Hua Chên, Province of Honan. It is 18 by 29 feet, and is believed to date from the T'ang period (tenth century A.D.). Those who allow their masterpieces to be destroyed by vandalism or neglect have no case. (*The Museum Journal*, Univ. of Pennsylvania, June 1928, pp. 109-129). ♪ ♪ ♪

A correspondent writes suggesting that Curators of Museums and others possessing ancient stone implements might communicate with Dr H. H. Thomas of H.M. Geological Survey (Jermyn Street, S.W. 1). It is often possible to trace the source of stone implements from the lithological character of the material; and such information is of great value in throwing light on prehistoric trade. It will be remembered that it was Dr Thomas who identified the Welsh source of the 'foreign' stones of Stonehenge (*Antiquaries Journal*, III, 239-260). ♪ ♪ ♪

A hoard of bronze implements was found at Coulsdon, Surrey, in January 1928; most unfortunately part of it was dispersed and the association-value of different types thereby lost to science. Mr Prescott Row, however, has the matter in hand, and it is hoped that some may be traced. What survived was presented by Mr Row to the Guildford Museum. May we urge those who hear of, or come into the possession of prehistoric bronze implements to communicate with Mr Harold Peake, F.S.A. (Westbrook House, Boxford, Newbury), Hon. Sec. of the Bronze Implements Committee of the British Association? ♪ ♪ ♪

In the last number (p. 132) we referred to a Roman villa at Berrygrove, a name which was lost. Mr Stuart Piggott, of the Reading Museum, now writes to report its rediscovery through an 18th century map on which the name was found marked at a spot close to White Waltham church, Berks (the present name is Waltham Grove). ♪ ♪ ♪

Mr Piggott also reports the discovery of pottery on Blewburton Hill, Berks. Some of this (including a fragment of haematite ware) is regarded as certainly of the Early Iron Age; but there were also found lying on the surface of the field 'two sherds with impressed rosette design, apparently originally filled in with white material'. This suggests an Anglo-Saxon occupation of the hill. It should be remembered however that we know nothing whatever of Anglo-Danish pottery. The hill was once crowned by a camp—Bleobyrig—but this has been almost obliterated by later strip-cultivation.

Reviews

DIE SÄCHSISCHE SCHALENFIBEL DER VÖLKERWANDERUNGSZEIT, als Kunstgegenstand und siedlungsarchäologisches Leitfossil. Von FRITZ RÖDER. Göttingen: Vandenhoeck und Ruprecht. 1927.

THE ANGLO-SAXONS IN ENGLAND, during the early centuries after the invasion. By NILS ÅBERG. Cambridge: W. Heffer and Sons; Uppsala: Almqvist. 1926. 12 kronen.

Professor Röder's paper, an overprint from the *Göttinger Beiträge zur deutschen Kulturgeschichte*, runs to 35 pages, while the contribution of the Swedish archaeologist is a well illustrated brochure of 200 pages, and both are welcome studies of subjects that intimately concern our own past history. Dr Röder's treatise is a 'chip' from a workshop in which, as he tells us in his *Vorbemerkung*, he has been collecting for some years material—literary and archaeological—for a History of the Conquest and Settlement of England by Germans from the Mainland. It is devoted to a study of certain vessels and objects in metal which have a special bearing on the larger theme on which he is at work, and it is noteworthy that both he and Nils Åberg fix upon the saucer brooch as a specially significant product, following in this the example of our own Reginald Smith and Thurlow Leeds, who in *Archæologia* have brought the same particular artifact into prominence. With the saucer brooch Röder associates the 'equal armed' fibula, a type with the head and the foot-piece drawn out horizontally to a great width while the bow is kept very short. Both these forms, which are found in special and limited areas, he claims as original creations of the Saxon metal worker, though provincial-Roman art is of course a factor in the background, and he makes the interesting observation that while both forms occur in the Old Saxon district between the lower waters of the Weser and the Elbe as well as in England, the best saucer brooches are found on our side of the North Sea, whereas our equal-armed fibulae make a poor show when compared with the Hanoverian specimens.

Most of the pages of the Professor's brochure are occupied with very careful descriptions, accompanied by illustrations, of a number of saucer brooches of the different types found in the Elbe region, in the 'Terpen', of Holland, in north-western France, and in the Saxon districts of England, a number which he claims to be larger than has been brought together before. The result of the survey throws, as he claims, new light on the Saxon settlement in Britain, but he does not bring out the results very clearly, and is reserving a complete presentation of these for a definitive work, to be preceded by a study, similar to the present one, of the equal-armed fibula. One special point which he regards as established is the presence and activity of continental Saxons in north-western France before the settlement in Britain. He does not refer here to the discoveries of saucer brooches in the Pas de Calais, for these, he points out, are late and in all probability importations from across the channel, but fixes on resemblances between objects from the Elbe district and certain finds that can be dated at about the year 400 A.D., the provenance

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of which was the early Germano-Roman cemetery of Vermand in the district of St. Quentin. Here was found the celebrated grave of the 'Chef Militaire', evidently a German chieftain in the service of Rome, who had been laid to rest with a full panoply, the pieces of which passed into the collection of Mr Pierpont Morgan.

Of about the same date of 400 A.D. was a tomb of a lady, buried with tomb furniture that passed into the possession of that accomplished antiquary M. Louis Pilloy of St. Quentin. His death occurred in 1922, and Dr Röder's efforts to discover the present habitat of M. Pilloy's notable possessions have been in vain. Fortunately however, in the latter's valuable *Etudes*, engravings had been published of several of the objects from the lady's tomb, while a fair photograph exists¹ of the whole set of objects as they lay in a drawer of M. Pilloy's cabinet. How it was that Saxon objects found their way into northern France in the second half of the 4th century Dr Röder says in the meantime *muß unerörtert bleiben*, and concludes with the very just assertion that to understand fully the archaeological material of the period of the settlement of the Saxons in Britain the previous continental history of the objects composing this material must be carefully elucidated.

Turning now to the second of the two publications noticed above, that by Mr Nils Åberg of the University of Uppsala, we have before us a far more substantial work than the brochure of Dr. Röder, but one which, as the latter remarks (on his p. 44), is not designed specially to deal with the 'previous continental history' of the objects that come to light in Anglo-Saxon graves in England. Of these objects viewed as English products an account is given by the Swedish scholar of a very thorough and painstaking kind, and all who are interested in British antiquities of the period of the Teutonic settlement must acknowledge the value of this careful review of what our soil has yielded up. Beside the treatment in the text there are at the end of the book thirty-five pages of inventory with topographical indications. Mr Åberg's book is moreover only the latest of a series of similar treatises on the migration period, such as *Ostpreussen in der Völkerwanderungszeit*, 1919; *Die Franken und Westgoten in der Völkerwanderungszeit*, 1922; *Die Goten und Langobarden in Italien*, 1923; while others go back to earlier archaeological periods. A list of the works is given on the cover of the book now before us.

Though Mr Åberg generalizes to some extent and offers suggestions as to connexions between English and continental finds, he devotes himself in the main to the examination of special classes of Anglo-Saxon objects, such as saucer brooches, cruciform brooches, buckles and strap-mounts and the like, which are well shown in more than three hundred illustrations. The book is excellently got-up, and the author has been supported by grants from two special funds as well as by Government aid. The output of scholarly works of this kind is a good deal assisted on the Continent by subsidies, which more rarely come to the aid of the British archaeologist and his publisher.

It would be impossible to follow the author in his detailed study of these various classes of antiquities, and the English reader will be more interested in the general views which the Swedish scholar has been led by his studies to adopt. He does not think that there is any marked difference between Angles and Saxons so that any sharp lines of boundary between their settlements could be drawn, but he emphasizes the distinctive character of Kentish or Jutish work, which became chiefly observable in the later sixth century, when Kent was in close touch with the Continent. This later Kentish culture

¹ Published in *The Arts in Early England*, vol. iv, pl. 148, London, 1915.

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bears a remarkable resemblance to that of Vendel in Sweden, especially in the matter of garnet inlays, so that visitors to the great Stockholm Museum might easily imagine that Kentish works had found their way to eastern Scandinavia. To explain this Åberg brings forward the theory that the conquest of Italy by the Lombards opened the way for the peoples of middle Europe to the Mediterranean and through that to the East, 'thereby rendering possible the establishment of connexions with the flourishing Byzantine civilization and with the Orient'. 'This development', he adds, 'which is in full swing at the beginning of the seventh century is the prelude to the Carolingian renaissance, and is the result of the Lombard invasion of Italy'.

That the Lombards had much to do with the encouragement of Mediterranean commerce, or that Byzantium directly influenced the later Teutonic tomb furniture, may well be doubted, though it is of course a fact that oriental products, such as Cypraea shells or amethysts, came in pretty abundantly to Kentish ports.

In the latter part of his book Mr Åberg has some paragraphs of a more general and freer kind than the necessarily rather stiff, if not jejune, analytical disquisitions on the tomb furniture. In Anglo-Saxon ornament he makes three stages of development, of which the first is characterized by spiral ornament seen first on the rare examples of the showy equal-armed fibula, an example of which was recently exhumed by Mr Thurlow Leeds in his Saxon village at Sutton Courtenay. The ornament appears next on saucer brooches dating in the century of which the middle point is the year 500, while the Bright-hampton scabbard-mount of the early part of the sixth century also shows it. The other stages are distinguished in Salin's well-known formulae as 'Style I' and 'Style II' of animal ornament, while interlacing comes in at about the same advanced date as Style II.

Apart from the conventional work in the 'Styles', Åberg notes a fact which had a significance for the future of Anglo-Saxon art, and this is a 'naturalistic trend in early animal ornamentation', which he calls 'an interesting phenomenon in the Anglo-Saxon style but one difficult of explanation'. On page 170 he derives it 'from oriental Byzantine art', in which phrase the first adjective is quite enough, and 'that blessed word' 'Byzantine' might have a rest. This same naturalism in Anglo-Saxon animal ornament at a much later date has been emphasized by Dr Brøndsted in his very valuable *Early English Ornament*, where he says on page 195 of the Early Christian carved stones that 'The animal ornamentation of the North of England works with true, natural animals', they continue 'to be beings of nature, in contrast to the always highly conventionalized ornamental animals of Scandinavia or Ireland'. In another connexion also this naturalism is apparent and this is in the animal ornament of the Gospels of Lindisfarne, which, fantastic as it is in the main, is in details far truer to life than the more purely Celtic ornament of Kells or Durrow. It may be remarked in passing that this is an additional and a convincing proof of the correctness of the ascription of that masterpiece to the Saxon bishop of Lindisfarne.

In a short section on interlacing Åberg refers to the valuable paper by Einar Lexow, of the Bergen Museum, called 'The Mainlines of the History of Interlacing'. This is unfortunately almost unknown to British readers, though an English version of it might have appeared some years ago in the transactions of an important archaeological Society, that did not however avail itself of the opportunity. The last section in the book deals in a necessarily rather hesitating fashion with the difficult question of the relations of Irish ornament of Early Christian times to the contemporary styles of the countries of north-western Europe in general. Save for the Late Celtic scroll work and spirals and some simple linear motives, the famous Irish ornament derives its main motives from

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Germanic sources, but later on, when Irish culture had assumed a dominant position, the debt was repaid with interest, and Irish influence on European decorative art becomes of great importance. This whole subject is of course now recognized as one of considerable complexity, but Mr Åberg has certainly made a contribution of value to the discussion of it by his recognition of the principle that the pagan art of the migration period must not be viewed as if in a water-tight compartment, but has behind it a long and interesting history, and in front of it also a period when it supplied motives to the Early Christian craftsmen, and flourished till after the Carolingian epoch it was merged in Romanesque.

We take leave of these two treatises with an additional word of recognition for the aid to British scholarship afforded by such careful contributions from abroad to the study of our national antiquities.

G. BALDWIN BROWN.

THE EARLY HISTORY OF ASSYRIA to 1000 B.C. By SIDNEY SMITH. Chatto and Windus. London, 1928. 37s. 6d.

This is the third volume of the historical trilogy which the late Dr L. W. King would have written had he lived, but alas! he had finished only the first two volumes when he was all too early cut off. There is therefore a long interval of many years between the end of his work and where Mr Sidney Smith begins, and for this reason Mr Smith, on whom has fallen this duty of devotion of completing King's work, has very wisely included in his first chapters a general survey of the Sumerian discoveries which have been made during the last few years. King apparently left no notes of his proposed third volume, so that the field was clear—a far more satisfactory condition than having to base a history on another man's framework. There is no room to doubt that Mr Smith was an excellent man for the task, and, now that his history lies before us, we can congratulate him on having maintained the high level of the two preceding volumes.

Much of his earlier chapters, as has already been hinted, might be called a history of Sumer. Mr Smith starts off with a note on the absence of palaeolithic implements in Assyria and Babylonia, a curious, well-known phenomenon, due, as he rightly thinks, perhaps to floods; but he is unnecessarily cautious when he says 'implements said to belong to that era' have been found in the Euphrates Valley near Dér ez-Zôr and the Syrian Desert. Apart from the two authorities he quotes, there were very definite finds made by Sayce near Carchemish (and noted in the Proceedings of the Society of Biblical Archaeology), and I myself picked up an unmistakable *coup-de-poing* at Tell Ahmar, below Carchemish. By the time man appears in the Tigris Valley he is using handmade painted pottery, and flint tools which betray a knowledge of metal. Mr Smith is wise in declining to admit that these were Sumerians; I personally have always felt that this painted pottery could not have belonged to this race. But that Sumerians did at one time occupy Assyria there is no doubt, and Mr Smith discusses not only the evidence for this, but also the connexion, doubtless for trade, between India, Sumer, and Egypt. As an interlude, but a most important one, comes the chapter on the Assyrians of Cappadocia who wrote so many business documents in their queer script and language. Then, as we reach the historical periods we find Assyria subject to the Third Dynasty of Ur (about 2200), and then a brief period when Ashur was independent, again to come under the domination of Hammurabi.

The greatest crux, of course, is the original home of the Assyrians. Time was when it was accepted that they were a colony from Babylonia, but now, in the face of increasing evidence, this theory has been relinquished. Not only, says Mr Smith, are there good linguistic grounds against this theory, but very heavy weights in the scale from the

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divergencies between Babylonia and Assyria in their social customs, the position of women, the calendar, the dating by *limmu* (not a Babylonian institution), and the penalties in the laws. He inclines to the view that their early home was west of the Tigris, north of the desert, and probably north of the Euphrates.

Space forbids me to go further into detail. I doubt the possibility that the prehistoric clay sickles may have originally had a cutting edge of small flint chips, as these sickles are sharp and hard enough to be effective, but, after all, Mr Smith only hazards it as a theory. On p. 85 he does not explain why he has '360 *biru*', while on the map on the next page the appropriate place has '3 *biru*'. Nor is it quite a fair assessment of the immense knowledge of drugs which the Babylonians possessed to say that 'the reasoning adopted by the Babylonians to deal with disease was the logic of nightmare'. It is true that part of this method in vogue was magic, but it may equally be said that there is no magic at all in hundreds of receipts which prescribe treatment for very many ailments, wherein the symptoms are given boldly and then followed by a plain statement of the drugs to be used. The two methods of healing existed side by side.

But these are merely trivial points in an altogether admirable work which marks Mr Smith as a first-class workman in his trade. R. CAMPBELL THOMPSON.

THE CIRCLE AND THE CROSS. A Study in Continuity. By A. HADRIAN ALLCROFT, M.A. Vol. 1. The Circle. Macmillan and Co. 1927. pp. xii, 379, 4 pls, and 39 illus. 12s. 6d.

This most interesting book is a collection of the author's articles published in *The Archaeological Journal*, and is the outcome, as he says, of his attempt to derive the word 'church' from the Celtic 'cruic' and the Latin 'circus' and not from the Greek *ἐκκλησία*.

More might have been done to string the chapters together and present the author's thesis and arguments in better sequence; but the following are his main contentions:—that meeting-places (both secular and religious) amongst European peoples from Greece to Iceland evolved from the round barrow in which the chief had been buried; that these moots, while in many cases keeping up a memory of their origin by consecration burials and dedication sacrifices, were made without any sepulchral purpose; that the bowl barrow developed into the 'mound moot' which is often called a cenotaph, the 'ring barrow' into the depressed earthen circus and amphitheatre, and the peristalith of the round barrow into the larger stone circles. 'Specialisation produced in Greece the theatre, in Rome the Circus Maximus, and the Amphitheatre, and from the same original by steps very similar has developed that characteristic structure of Christianity which we call a church'.

The author develops his thesis with much archaeological learning and literary evidence—largely classical. He has chapters on the evolution of round barrows and sepulchral rings, on the Achaean, Latin and Danish moots, on earth circles in Britain, stone circles in Aberdeenshire, and elsewhere, and on churches with circular churchyards. There are ethnological chapters on the Nordic peoples and the Cimbri and a particularly sane and informing chapter on Druidism.

With his main contention—the development of the moot from the barrow, the *locus consecratus* from the moot, and the church from them both—it is possible that many archaeologists will agree; but in the course of his arguments the author develops such unusual views as to chronology, the sepulchral origin of certain stone circles, and other accepted beliefs, and states them with such confidence, that one feels the want of a

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judicial summing up after so much advocacy, to say nothing of a statement for the defence.

There is a neglect of objective archaeology throughout, and an ignoring of cultural evidence which will strike most readers.

In many cases no evidence in support is given. What evidence is there, for instance, for the statement that 'in the Christian barrow [up to the 10th century] were buried or were entitled to be buried all such of the community as could claim to be "members of one family in Christ"' and that 'these Christian Barrows came to be so many churchyards and after many years many of them came to have each its church'?

He thinks the disc barrow was chronologically the latest outcome of barrow building, does not agree with Abercromby that they ceased about 650 A.C.,* thinks from their geographical distribution and *the evidence of their contents* that they were constructed by the Belgae who made their headquarters on Salisbury Plain, and states that in Ireland and Wales barrows of this type continued to be built so late as the fifth and sixth centuries A.D.—again we call for evidence.

The chapters on the Achaean and Latin moot are full of interest. The author accepts with conviction the views of Sir W. Ridgeway as to the Scandinavian origin of the Achaeans. He suggests that the thirty constituent communities that made up ancient Rome each had its own turf-circus moot and that these which he identifies with the *Curiae Veteres* were amalgamated in the Circus Maximus, and he sees in this the meaning of the story of the thirty little pigs which served Aeneas as a sign where to build his new city—the sucking pig being the earliest animal to be sacrificed to the Gods.

In the chapter on the stone circles of Aberdeenshire he is at pains to disprove the sepulchral origin of the larger stone circles generally—'It is a just statement of the facts to say that, while small circles, *i.e.* of 50 feet diameter or less, have frequently been found to contain interments which warrant us in believing that such circles were built as grave-monuments, there have been no such discoveries in the larger circles, where, if interments of any kind have come to light, they bear no proportion either in dignity or in number to the size of the circles'. He quotes fully from F. R. Coles' account of his very careful and complete investigation of the circle at Garrol Wood. He notes that (besides a central pit full of charcoal and incinerated bones) Coles found, in a central area 12½ feet in diameter ringed by thick squat stones, charcoal and fragments of coarse pottery with five separate deposits of incinerated human bones, each resting on a piece of granite in a shallow hole; nevertheless the conclusion of the author is that Coles' 'own account, as quoted above, cannot possibly be accepted as proof of the presence of any grave, nor is there any sufficient evidence to shew that this circle had been constructed to be a place of burial'. All burials within the larger circles are to him either intrusive or dedicatory interments—'In not one single case is there recorded anything in the way of the solitary but imposing burial which is the proof of the purpose of the funereal monument of an individual; there is no central grave, no dolmen or menhir, no grave-furniture'. But why should he expect a *solitary* interment?

Though few archaeologists will agree with his conclusions as to the non-sepulchral purpose of the Aberdeenshire circles, as regards their use as moots, the resemblance to the primitive Phaeacian Moot of the *Odyssey*, to the Greek Theatre and to the Danish Ting, as set forth by the author, is very striking.

* Abercromby's date was based upon a misconception, as we shall show in a forthcoming article. It is most unlikely that any disc-barrows were made after, say, 1000 A.C. at the very latest.—Ed.

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Of many other stone circles in the British Isles the author gives descriptions. He denies their sepulchral purpose in Cornwall, Derbyshire and elsewhere, and claims nearly all as moots. Where they occur two or three together the difficulty is explained by supposing that the larger ones were constructed later to accommodate an increased population, noting that these are generally the best preserved; or by the suggestion that the older one may have been desecrated, *e.g.* by the shedding of blood, and therefore abandoned. He quotes Mr W. J. Andrew that the Derbyshire circles are distributed over the map at regular intervals of eight miles, and suggests that the area was regularly mapped out into sections and each section provided with its own moot, and that the Druids were sufficient adepts at geodesy to plan their position over difficult and broken country.

The author's ascription of archaeological structures to a late date appears to be an obsession. He notes that in south Northumberland and the county of Durham circles are unknown, camps strangely few and even barrows are rare. This he explains by supposing that the Romans evicted the population south of the wall, implying that the numerous circles, camps, and barrows north of it were built later than the wall; the generally accepted chronology of these structures he considers to be mistaken. It is indeed with his views of the date of the stone circles that nearly all archaeologists will quarrel. Like Fergusson he puts them very late though not actually post-Roman—'When the first of the great circles was set up in Britain we may know when we know in what year came the first of the Brythonic tribes to these islands; that was certainly not at any very remote period as archaeology counts'. This he supports by their geographical position, asserting that they are confined almost exclusively to the regions where the Brythons penetrated, having their centre about Stonehenge and Avebury and pushing mostly along the high ground, southwest into Devon and Cornwall and northwards by way of the Cotswolds and the Pennines into Wales, Derbyshire and Strathclyde. He points out that they are most remarkable and best preserved just where the Brythons longest maintained their independence: Cornwall, Strathclyde and Aberdeenshire and certain parts of Ireland. But the route along the high open ground must have been that of all invaders from across the Channel, and what is the evidence that Aberdeenshire and those parts of Ireland were specially Brythonic? He argues that the stones are embedded such a short distance in the ground that stone circles could not have stood for more than a short time. But the instances given are mostly from fallen stones, few from those that are standing.

Stonehenge he claims definitely as a moot erected about 450 B.C., though he repeats the common error that two 'astronomical pointers' mark the rising and the setting of the sun at the winter and summer solstices. He belittles all the accumulated negative evidence of its pre-metallic age, and omits all mention of the positive and conclusive proof—the discovery of a foreign stone in a long barrow—that these stones were brought to Salisbury Plain before the end of the neolithic period. Here at least is a definite fact.

He makes no attempt to account for the purpose of the stone circles which are too large to have been moots, such as Arbor Low, and Avebury.

In support of the Brythonic or Cimbric origin of the stone circles he points out that these, apart from the smaller ones of sepulchral purpose, are hardly to be found except in Brittany and the area thence northwards to Jutland with outlying examples in southern Sweden and Norway. Going further afield he admits that there are stone circles of various dimensions and elaboration in Algeria and North Africa, beyond Jordan, in Arabia, in India, in Japan, and even Central America 'but all these appear to be sepulchral'

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and few of them, he says, approach the grandeur and dimensions of those which lie between Jutland and Fermanagh, between Brittany and the Moray Firth. The fact is that a proper study of the distribution, character and dimensions of stone circles in the Northern Hemisphere has yet to be made, and that interesting as Mr Allcroft's views may be, the time has not yet come for any conclusions ethnological or otherwise to be safely drawn.

The chapter on earthen circles and amphitheatres in Dorsetshire and the South of England is one of the most interesting and convincing. It is undeniable that many of the British villages on the chalk have circular depressions which fulfil the conditions laid down by the author—the sunken floor, the gentle broad interior slope of the unfenced vallum, the position close to the road and just outside, or occasionally inside, the defensive bank of the village. Doubtless some of them may have been moots, but unfortunately these are just the characteristics of a village pond, especially when such depressions are found, as they often are, near the head of acombe. Only when accessory drains to keep them dry are found can one exclude this simpler explanation. The downs too, and especially it would seem in the neighbourhood of ancient occupation, are often covered by small circular depressions difficult to account for; possibly they may have been chalk pits to supply mud-walling for the dwellings—they are too big for hut circles, and too numerous for moots.

The author we think weakens his case by claiming too much; Pond barrows for instance are classed as Moots, but they occur in groups often of the same size; they are associated with Bronze Age barrows, and are so beautifully symmetrical that they can hardly belong to the same class as the circuses described and figured in the book. Even mazes are swept into the net.

The author's ethnology is extreme Nordic—Kelts, Achaeans and Galatians, Goideis, Brythons, Belgae, and even Picts, are all Nordic and Cimmerian with some admixture of Iberian. But it is to be doubted if all the round- and medium-headed inhabitants of this Island are to be accounted for without some further brachycephalic strain than that of the Beaker Folk.

His etymology is fearless. 'Ting is identical with the Greek *τέγη* and *τέγη* is another synonym for moot' and *ring* (*krink* in Low Dutch dialects) is etymologically identical with the Latin *circus* and cognate with the Greek *κύκλος*.

The whole book is interesting and stimulating. The main thesis is not new and is perhaps true, but unnecessary opposition to it will often be excited by extravagant assertions.

J. P. WILLIAMS-FREEMAN.

HARRISON OF IGHTHAM. Prepared for publication by Sir E. R. HARRISON.
Oxford, 1928. 15s.

Benjamin Harrison was well known during his lifetime to all British archaeologists, and his name will always be associated with the discovery of eoliths. A life of him was obviously needed, and the present book admirably fulfils its purpose. Harrison kept the village shop at Ightham, and his knowledge of the district was extensive and remarkable, as the notes and letters in this book show. In the earlier years of his life his interests were perhaps less closely restricted than in the later years, when 'flints' came to absorb more and more of his time. One interesting feature that is now made quite clear is that the same deposits yielded both eoliths and palaeoliths. This fact makes it unnecessary to debate the question as to whether these eoliths are natural or humanly shaped objects,

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since the palaeos alone are sufficient to attest the presence of Man at the time when these plateau deposits were formed. Had Harrison confined himself to explaining the discovery of palaeoliths, and comparing the deposits here with others in which they had previously been found, there would have been no controversy, and those who are still completely sceptical about the human origin of coliths cannot help regretting that he placed so much evidential value upon them.

The book makes good reading and is edited in a most scholarly manner. There are very few points of criticism to be made, but it is unfortunate that the megalithic remains at Coldrum are described as 'a stone circle'. The plan is most clearly rectangular, and consists of a burial chamber at the east end of what was originally a long barrow.* The book is a record of a valuable life, and gives interesting side-lights on the history of archaeology in England from a new angle.

PRE-ROMAN BRITAIN. By H. J. MASSINGHAM. Benn's Sixpenny Library, no. 40.

This book possesses all the faults of *Downland Man*, of which it is a réchauffé, but nevertheless the publishers demand the exorbitant price of 6d. a copy. The style is bad, and the meaning (if any) of the extraordinarily long sentences very obscure. Such expressions as 'the . . . long barrow, . . . and the dolmen were smalled into the cist or cairn' indicate that the eccentricities of the author have 'bigged'. Scotchmen, who value their sixpences, should beware.

R. C. C. CLAY.

THE EARLY IRON AGE IN ITALY: A Study of those Aspects of the early Civilization which are neither Villanovan nor Etruscan. By DAVID RANDALL-MACIVER. Oxford: Clarendon Press. 1927. 84s.

The Early Iron Age civilizations of the Apennine Peninsula are generally apportioned between two 'races' distinguished by their burial rites. Dr Randall-Maciver has adopted this division from his Italian colleagues, but he has subdivided the cremationist 'race' into three 'nations' each regarded as having entered Italy already distinct and differentiated. The inhumationists are said to be aboriginal in the Peninsula from neolithic times, but differ so much among themselves that their several branches are sometimes spoken of as 'races'.

The same author has already described the Villanovans in a former volume. The first part of *The Early Iron Age in Italy* is devoted to an account of the cremationist groups living in Venetia and the lake district respectively, the Atestines, authors of the brilliant civilization disclosed in the cemeteries round Este, and the Comacines whose chief necropolis is Golascecca. The second and third parts deal with the inhumationists—the 'Picenes' interred at Novilara, etc., and the various peoples buried in the cemeteries of southern Italy and Sicily. The materials here treated are very varied and complex, far more so than the furniture of Villanovan graves, and hence the treatment is inevitably more summary than that offered in the previous work. The illustrations are however a decided improvement on those of *Villanovans and Early Etruscans*. Instead of reproducing wholesale plates from Montelius' well-known works, the author has here collected a multitude of objects hitherto unpublished or buried in inaccessible periodicals and so made an important body of comparative material available for study. Incidentally a number of the foreign terms, slavishly transcribed by most writers on Italian archaeology, have this time been replaced by the familiar English equivalents.

* See Ordnance Survey, Professional Paper, new series, no. 8 (1924), plate 1, no. 2 (plan).

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And how important this material is ! It was through the Atestines that the 'situla' style reached northern Europe. But Randall-MacIver shows by a critical analysis, illustrated by a welcome new photograph of the Certosa situla, that the style was primarily Etruscan and only reached Venetia from that quarter. Atestine culture is indeed full of reminiscences of the continental 'Hallstatt' culture, from antennae swords onward. A discussion of the beads and glass, especially of that curious group of vases from Sta. Lucia, whose shapes seem typically native, would have further helped the elucidation of our problems. The Comacines, here for the first time traced back to the beginning of the Iron Age (Benaacci 1), have no less intimate relations with the urnfield cultures north of the Alps. Indeed the stone circles at Golasecca invite comparisons with the Celtic west though only the Etruscan circle graves are here cited.

The Picene culture, of which this is the first connected account, belongs to a different world. Its affinities as suggested by the bronzes are all specifically northwest Balkan. A glance at the pottery reveals a whole series of nuances that characterize the treatment of clay in the Middle Danube basin. Still more curious parallels might be cited for the native pottery of Calabria. On the strength of burial rites and Polybius, this pottery is assigned to men of Siculan race. It includes biconical jugs and water-jars of Villanovan form. To avoid the inference of proto-Villanovan influences as postulated by the late Professor Pigorini, our author suggests that these shapes, and so the Villanova ossuary itself, have a neolithic ancestry. Yet precisely the same forms adorned with just the same flutings and equipped with identical handles come from cemeteries in Slavonia !

We are left by a study of this volume with the impression that pre-Roman Italy was a veritable mosaic of peoples just as history represents it. Their connexions among themselves and with the outside world were obviously of a very intricate order. They can only be unravelled, if at all, with the aid of far more extensive and systematic excavation and above all of better publication than have hitherto been the rule. In these two monumental works Dr Randall-MacIver has gone as far as a foreigner can towards filling the last mentioned need. The accurate definition of cultural phases and the establishment of a sound chronological framework is the indispensable precondition to any historical reconstructions. It is also what the English archaeologist most needs since his chronology is largely dependent on that of Italy. It is just in this work that our author is most happy.

V. GORDON CHILDE

FESTSCHRIFT ; publication d'hommage offerte au P. W. SCHMIDT ; edited by W. KOPPERS. Pp. 977 with 41 plates, 2 maps and 158 text figures. Vienna, 1928.

Father W. Schmidt was many years head of the great Jesuit missionary training college of St. Gabriel's at Mödling near Vienna, where for the first time missionaries received regular and systematic training in anthropology as preparation for work in the field. As such, and as the leading exponent of the 'culture-historical' method, he has exerted an immeasurable influence over the widest circles. The extent and value of that influence can be guessed by glancing at the names of the seventy-six contributors to this volume of essays presented to Father Schmidt on his sixtieth birthday. As the recipient worked primarily in the field of comparative religion and philology, the majority of the papers naturally refer to those disciplines. But there are many articles which deal directly with prehistoric archaeology and others that bear upon its problems. It is the duty of a reviewer of such a work in *ANTIQUITY* to draw attention to some of these which

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would otherwise escape the notice of archaeologists who might easily overlook a volume of this kind.

Of first rate importance is Prof. Junker's paper, 'The development of prehistoric culture in Egypt, (in German). Beginning with an able critique of Scharff's *Grundzüge* the author draws attention to many new points, for instance the existence in parts of Lower Egypt of a culture, parallel to but distinct from the First Predynastic of the south, and illustrated by some stray vases published by him in *Tura* (their dating is confirmed by a grave at Ma'adi excavated by Bovier-Lapierre but still unpublished). No less important, if shorter, are Dr Franz' paper 'Old European boomerangs' (finds from Brabrand and later; the flint sabre from Favrskov, Denmark and its bronze counterpart from Hede, Sweden, not necessarily copied directly from Oriental models), and that of Prof. Sirelius on prehistoric sleighs (one is datable to the *Littorina maximum* but was not necessarily, as the author had previously thought, drawn by tame reindeer). Prof. Menghin contributes a bold and brilliant paper 'Zur Steinzeit Ostasiens' wherein an attempt is made to correlate the stone age culture of Further India and China with those of the Baltic, the Danube basin and Mediterranean lands. We find that Kunda belongs to Ural-Altaic folks and Tripolye people went eastward to turn up in China as Tocharians. Lastly we must mention a paper on Magdalenian pictures of disguised bears at Trois Frères by Count Bégouen and another on a group of stylized rock-paintings from Spain by the Abbé Breuil.

Of course there is a great deal outside the prehistoric section that has important bearings on archaeological problems. The very first article in the volume deals with the philological relation of the Subaraeans (that ill-defined group in northern Mesopotamia to which the Mitanni people belonged) to Prof. Marr's Japhetic family of languages. Another explanation for prehistoric trepanations is suggested by Dirr's account of the appeal to this operation as a proof or ordeal in the customary law of the Caucasus. Rivet illustrates his, in itself very striking, paper, 'Relations commerciales précolombiennes entre l'Océanie et l'Amérique' with a good account of early navigation on the Pacific coasts. But if I wander into these sections, I shall never stop. Even the most provincial antiquary will find the book packed with illuminating matter and he had better buy it.

V. GORDON CHILDE.

THE MINOAN-MYCENAEAN RELIGION AND ITS SURVIVAL IN GREEK RELIGION. By MARTIN P. NILSSON. C. W. K. Gleerup, Lund; H. Milford, London. 1927. pp. xxiv, 582, 4 plates. 31s. 6d.

In his *History of Greek Religion* Professor Nilsson paved the way for this book, which is the most important yet written on the Minoan-Mycenaean religion and will long remain the fundamental work on the subject. Ever since the discoveries on the Greek mainland, in Crete, and elsewhere, first gave a rough conception of the religious ideas of the Minoans and Mycenaeans the contrast between their religion and the Olympian pantheon of classical Greece has been a hard problem. The school of Frazer has taught that behind the Olympians there lies a great background of primitive beliefs, many of which have analogies among more or less uncivilized peoples all the world over. Now the author suggests that the Minoan-Mycenaean religion was not a kind of monotheism devoted to the Great Mother and her son and consort, but was distinctly polytheistic and formed the basis from which classical Greek religion evolved. There are four main factors. The first consists of the primitive beliefs already mentioned, the second of the Minoan-

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Mycenaean religion, the third of the true Greek element which is practically limited to Zeus, and the fourth comprises new divinities introduced from without. This avoids the difficulty of reconciling Homeric and pre-Homeric religion and of the idea that the latter, introduced by an assumed invasion of fair and godlike Achaeans from the north, entirely obliterated all traces of the previous religion. Professor Nilsson does not advance a theory and then seek for evidence to establish it, but works on true scientific principles. He first collects the facts, classifies them and subjects them to strict examination, so as to avoid mistaken analogies and irrelevant detail as far as possible. Then with a wonderful flair for the essential and a wide knowledge of religions he gives their interpretation.

An introduction shows his view of the historical context as reconstructed from the archaeological evidence. He believes that the first Greeks, Ionians, entered the country in the middle Bronze Age and that like the Northmen of later days, they raided overseas and destroyed the Cretan palaces, and brought back with them to the mainland rich spoil and cunning craftsmen as slaves who taught them the Minoan civilization. Later, about 1400 B.C., the Achaeans arrived, overthrew the Ionians and drove them to settle across the Aegean. This, though a good working hypothesis, rather slurs some of the archaeological factors on the mainland. On the other hand the author does good service by emphasizing the divergence between Crete and the mainland and lays special stress on the differences observed in burial customs, which indicate dissimilar ideas about the dead, and on amber and the boar's tusk helmets which figure so prominently in mainland tombs. Though the Greeks, Ionians and Achaeans, adopted the Minoan culture, yet as time progressed the Cretan veneer wore through and the Greek element came to the front again. A native art is always strengthened by resistance to an invading culture and this culminates in a reaction in which the indigenous at last absorbs the foreign.

The main part of the book divides into two sections. In the first Professor Nilsson examines in detail the archaeological evidence for the various phases of the Minoan-Mycenaean religion and sets out his conclusions clearly. He treats in turn sanctuaries natural such as caves, and artificial such as shrines in palaces and houses, and then their equipment of altars, tables of offering, and sacred vessels and vestments. He proceeds to the familiar cult objects, idols, trees and pillars, double axes, birds, and horns of consecration, and ends with a chapter on the Minoan-Mycenaean pantheon and another on the cult of the dead.

The second section, taking the deductions of the first as a basis, shows how many Minoan-Mycenaean survivals there are in classical Greek religion. One great point is the continuity of the cult places which can be seen at many of the most renowned Greek sanctuaries: Delphi, Eleusis, Amyklai, Mycenae, the Argive Heraeum and Athens itself. He shews that, apart from Diktyнна, Britomartia and Aphaia who were already suspect, several Olympian goddesses have a Minoan-Mycenaean ancestry: Hera, Athena, Artemis, Eileithyia and Helen. An illuminating chapter is that on the divine child treating naturally the birth of Zeus in Crete, and other child deities: Hyakinthos whose name betrays his non-Greek origin, Ploutos and Dionysos. He concludes with the Hero Cult and the After-Life, where he finds as stated one of the great distinctions between the practices of Crete and of the mainland.

This brief survey of an excellent and learned book of nearly six hundred pages indicates its scope and the author's views, which are eminently reasonable, for just as the historical Greek people was formed by a fusion of Greek and non-Greek races, so it is only natural that its religion should also have been a combination of the two. It is a model of method and most stimulating in thought, and will inevitably cause a revision of

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the theories hitherto current not only about the Minoan-Mycenaean religion, but also about the classical Greek religion itself, and no Hellenist can afford to overlook it.

A. J. B. WACE.

THE AURIGNACIANS AND THEIR CULTURE. By GEORGE L. COLLIE (Curator of the Logan Museum), being the Logan Museum Bulletin, vol. 1, no. 1. Published by the Logan Museum, Beloit College, Beloit (Wisconsin). January 1928. 75 cents.

Mr Collie has started what is intended to be a series of Bulletins issued by the Logan Museum. This first number gives a clear and concise sketch of one of the most important cultures of prehistoric times. It is by no means a 'scissors and paste' work; the author has himself undertaken investigations in the field and has had the opportunity of studying many of the results obtained by other prehistorians. It may be suggested that Mr Collie's book is too cut-and-dried; that he has too skilfully skated over the many difficulties that surround his subject and at once protrude themselves when any detailed story of those far-off times is attempted. But Mr Collie is writing, I fancy, for an uninstructed though interested and educated public, and for them it is just as well to present the results so far obtained as a consistent whole; too many marks of interrogation only weary the reader, and they will soon present themselves to his notice if the subject is further perused.

After a preliminary chapter on the Palaeolithic times generally, a number of chapters are devoted to the coming of Aurignacian Man to Europe, and the conditions, climatic and otherwise, then obtaining under which Man had to live. Further chapters follow on the various types of Aurignacian skeleton that have been discovered and on the various tools, etc., that have survived in the 'homes' for the 20th century investigation to excavate and study. These could well have been elaborated. Finally several chapters are devoted to a description of Aurignacian life, customs, art and religion, as far as these can reasonably be deduced from the investigations. Not the least interesting and important sections of the book are those dealing with work undertaken in North Africa. Mr Collie will find that when the results of Mr Leakey's excavations in western Kenya are published he will be profoundly interested. One regrets the choice of photography, rather than pen and-ink drawings, for the illustration of tool types. Photographs really show very little as compared with careful line drawings. On p. 27—and in the index—the names Brünn and Brno occur; of course the former is only the German form of the latter, but it might have been wiser to have stuck to the one or the other. A really nice little book, and much above the ordinary more or less popular works; are we to expect further numbers dealing with the other cultures? One hopes so.

M. C. BURRITT.

THE HISTORICAL SAINT COLUMBA. By W. DOUGLAS SIMPSON, M.A., D.LITT., F.S.A., Scot. Second edition. Aberdeen: Milne and Hutchison. 1927. 7s. 6d.

It is not unfair to say that this book is an outcome and expression of two tendencies of modern times—the one general, the other localized in Scotland.

In the last generation there was a pleasing desire to whitewash the more obtrusive gargoyles in the Temple of History. We recall Tiberius, Elagabalus, Richard III, among those who profited by this gracious exercise. But now there is abroad a contrary spirit; people love to 'black-wash' the saints depicted within the same stately structure. It would be unjust to say—as other critics have said in effect—that Dr Simpson has treated

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St. Columba with the self-conscious superiority that has inspired Mr Lytton Strachey's dissections of certain idols of the populace ; but he cannot wholly be absolved from a charge of iconoclasm.

The second tendency—that localized in Scotland—may be called 'The Pictish Heresy'. Ireland (*Scotia major*) makes large claims to have imparted to Scotland (*Scotia minor*) her heritage of culture, of language, and of religion. Such a claim vexes the patriotism of the latter country ; and accordingly, in modern times, the Picts have been discovered and 'boomed' as rival claimants. Happily for their champions, next to nothing is known for certain about the Picts, so that dogmatic assertions can be made about them with but little fear of contradiction. They can be decked out with a high civilization ; a Gaelic speech can be put into their mouths ; St. Ninian of Whithorn can be invoked, to have them Christianized long before St. Columba shall intrude his unwelcome presence. No doubt there were other missionaries from Ireland who laboured with success among them ; is not the name of one commemorated whenever we speak of Loch Maree ? But then, these came from among the Picts of Dalriada, and so count for nothing in favour of the Irish claim.

A book of no small size appeared some time ago, setting forth theories of this kind. Dr Simpson thinks that professed Celtic scholarship has earned little credit by treating this book with a conspiracy of silence. On the contrary, we are not sure that Celtic scholarship has not earned merit by its large-hearted Christian charity !

Now the Picts have actually told us some few things about themselves, and these are totally irreconcilable with all such fantasies. For example, they have left us a number of inscriptions in the Ogham character. No attempt to interpret these inscriptions as any form of Celtic has produced anything but bosh. The combination of letters MAQQ appears upon one or two of them ; but where everything is linguistically so strange, we are not entitled to assume that this is any form of the Celtic word *mac*, 'son', so frequent on the Irish Oghams ; it may be a mere accidental coincidence. Whatever may have been the Pictish language, these inscriptions assure us that it was certainly not Celtic. Moreover, the form of the Ogham character used is late and decadent ; curved lines appear, clearly betraying the influence of penmanship ; and there are many new forms among the letters, which suggest artificial modifications introduced by some scholar grappling with the problem of reducing to writing for the first time a language full of unfamiliar sounds.

Again, much is made of certain strange symbols found upon monumental stones in the land of the Picts. In the book before us, these are pointed to, with confidence, as affording evidence that the Picts had a Christianity independent of the Scotie Christianity of Columba. The stones bearing these symbols are divided into three classes, which may be thus described :—

- I, Rude blocks, with the symbols incised.
- II, Similar blocks, with the symbols incised on one face, and with a cross and ornament of the kind usually called 'Celtic' on the other face, in relief.
- III, More shapely stones, with the symbols and cross associated together, both in relief, and both alike decorated with 'Celtic' ornament.

To which may be added class IV, with the ornamented cross alone, and no symbols.

These monuments are assumed to be all Christian ; but is the assumption justified ? We think not. There is absolutely no analogy, in the whole vast field of Christian symbolism, to these strange Pictish figures. It is impossible to suggest any Christian meaning for them. Ordinary Christian symbolism, universal everywhere else, makes no

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appearance among them. They are found, not only on stones, but also on metal ornaments, which, to say the least, have not a Christian appearance. They are not the recondite property of initiates, but are familiar to the John Smiths of Pictland, who scratch them on pebbles or on the walls of caves, just as their modern representatives write their names or other trivialities. There are some remarkable analogies between these symbols and certain elements in bronze-age rock sculpturings. This is just what we should expect if, as is most probable, the Picts were the survivors of the bronze-age aborigines: the symbols have assumed a more artistic aspect under the influence of the art of the La Tène civilization. If we accept these symbols as being essentially Pagan, the four classes of stones fit into their places with the neatness of a Chinese puzzle. Class i are Pagan monuments pure and simple. Class ii are similar Pagan monuments which have at some later time been Christianized. Class iii are monuments of a syncretistic period, when the Picts were emerging from their Paganism, but were still trying to reconcile the new teaching and their ancestral beliefs; they are in fact monumental equivalents of the well-worship and the grove-worship which the Church was obliged to tolerate at the beginning of its missionary activity. Class iv represents the complete conquest of the Cross, when the symbols had been entirely abandoned or proscribed, with the Paganism of which they were the expression.

Further, the art of the superadded crosses is totally different from that of the symbols and the native animal sculpture associated with them. It is the ordinary system of interlacing, key, and spiral pattern, which makes up the material of Celtic ornament. And this ornament, when found in Pictland, differs in one most notable way from the same ornament as found elsewhere. It is almost always excessively minute and delicate, and is complicated to the last possible degree. The style is utterly unsuitable for stone sculpture; the labour of producing it must have been prodigious. This fact has not escaped the notice of Dr Simpson (p. 78), but he fails to observe its significance, which is surely obvious. The models which the sculptors followed in cultivating this art were not stone sculptures, but were metal-work and manuscripts, in which portable form the designs were carried into Pictland. The native sculptors, like their bronze-age ancestors, incised their symbols, and had attained to no small skill in drawing them. Their foreign teachers turned their talents in other directions, giving them shrines and manuscripts to copy in stone: and taught them sculpture in relief. The square panel beneath the symbols on the Rosemarkie stone (to mention but one example out of many) is quite obviously a copy of the cover of that essentially Irish product, an ornamental book-shrine of metal.

The claims made for *Candida Casa* go far beyond the available evidence. Thus, we read that wherever the 'Celtic' wheel-cross is found we are there to see the influence radiating from that centre; and why? Because the wheel-cross is derived from the *chi-rho* monogram (a mere hypothesis, unproved, and, in fact, very far from probable); and this monogram is found on certain ancient stones at Whithorn. But it is also found on certain ancient stones in co. Kerry, and it would be just as reasonable to transfer the centre of influence thereto.

Much is made of a story told in the *Lismore Life of St. Columba*, that when the saint arrived at Iona certain bishops came to drive him away. From this it is inferred that he was not even the first Christian to establish himself there. But the tale goes on to say that God revealed to him that they were not real bishops. Manus O'Donnell, the later biographer of the saint, or whatever authority he copied, has probably hit the nail on the head, notwithstanding the animadversions of Skene; these 'bishops' were pagan druids. Analogy with other monasteries of Irish foundation would lead us to expect to

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find evidence of a previous Pagan sanctuary on the site, which the Church has thus re-consecrated. The story of the immolation of Oran is obviously a Pagan tradition, which has somehow become incorporated with the Christian folk-lore of the place.

In the enumeration of the remains on Iona (p. 55) mention should have been made of the problematical foundations under the Cathedral pavement: and the circular building in front of the west door should not have been called the stump of a round tower—whatever it was it certainly was not that, as its wall is far too thin. Tigernach has been dethroned by Prof. MacNeill from his position as 'an authority of high importance' (p. 59). St. Ciaran's Seat was not at Clonmacnois, but on the plain of Magh Ai (introduction p. xxxi). The word *Cathach* (p. 81) is not pronounced 'Caah' (which is itself scarcely pronounceable); this mistake is not Dr Simpson's, but it would have been better not to repeat it.

For two reasons it is a weak argument that, because cormorants are common at Ländisfarne, therefore the Book of Ländisfarne, which is decorated with birds supposed to be cormorants, must have been written there. The art of which this book is one of the supreme expressions, is wholly subjective, not objective, and is independent of external impressions to an extent scarcely paralleled elsewhere; and cormorants are common everywhere in British seas, and no doubt were much commoner before the Evil One invented guns and Cockney sportsmen.

Among the well-selected illustrations, fig. 60 (which, incidentally, is upside-down) represents a slab at Iona described as a connecting-link between Irish and Anglian work. It is, however, definitely anchored to Ireland by an inscription, which does not appear in the illustration; it is much injured, but can be read as the memorial, in the Irish language, of a man with the Irish name Gilla-Choluim. This name, which means 'servant of Colum', is actually the only written record of the patron saint now remaining on the island.

To sum up a review which could easily be made much longer, so many are the points of interests raised by this book. Dr Simpson's work provokes thought; demands serious consideration; makes valuable contributions to the history of a very obscure period; but hardly carries complete conviction.

R. A. S. MACALISTER.

BUTLLETI DE L'ASSOCIACIO CATALANA D'ANTROPOLOGIA, ETNOLOGIA I PREHISTORIA. Vol. IV. 1926. Barcelona.

The publications of the Catalan Association contain a great deal of most valuable material, and English-speaking readers who are familiar with French and Latin need not be deterred from reading them on account of the Catalan language in which they are published. The present volume contains an article on 'The Iberian alphabet and Inscriptions' by Julio Cejador; one on 'the Anthropology of Teneriffe' by Eugenio Fischer; one in French on 'The Origin of the European Pheasant'; and another in German on 'Races of the Late Stone Age in the Iberian Peninsula, part 1: the Iberian Peninsula'. The review section is always very full.

SYRIA. Geuthner, 13 rue Jacob, Paris. Vol. VIII. 1927.

The principal article in this number is an account of the second session at Mishrifé by Count du Mesnil du Buisson. It is followed by one on 'Kasr El Heir' by Albert Gabrielle. The reviews are as usual good and interesting. SYRIA is published under the auspices of the High Commissioner in Syria, and contains accounts of the work which

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is being done by the French in their mandated territory. It is the official organ for reporting these results and, although separate parts are not sold, the annual subscription (120 francs) is such as to bring it within reach of all. It is published four times a year, each part containing about 80 pages and numerous fine illustrations.

ARCHIV FÜR ORIENT-FORSCHUNG, edited by ERNST F. WEIDNER (published direct by the Editor, Babelsberger-strasse 48, Berlin-Wilmersdorf, Germany).

Students interested in the archaeology of the Middle East are of course familiar with this periodical, but we wish to draw the attention of all readers of *ANTIQUITY* to it. (For the benefit of those whose knowledge of foreign languages is limited we may say that several of the articles are in English). The current number contains an article by Dr Weidner, the Editor, on 'A Statuette of Pur-Sin of Isin', and others, in English, by Drs Albright and Cannon, together with reviews and short notes, and a bibliography of recent publications, classified according to countries. Dr Weidner's journal deserves the support of archaeologists who value scholarly work and a wide outlook, and we gladly take this opportunity of recommending it to our readers.

BULLETIN DE LA SOCIÉTÉ PRÉHISTORIQUE FRANÇAISE. March 1928 (vol. XXV, no. 3).

This number contains an extremely valuable descriptive catalogue of megaliths in the department of Haute Marne by Monsieur G. Drioux. If only similar inventories could be compiled for the rest of France their distribution could be mapped and no doubt explained, but until this is done—and it will be a big job—conclusions based upon distribution must necessarily be tentative. There is a short article with a plan of a Roman theatre near Rouen, by Monsieur Couil, and an interesting note on what were formerly called 'flint saws' and are now known as 'elements of sickles' by Dr Baudouin. It is to be regretted, however, that our French colleagues pay so little attention to the work done in other countries. The fact that these flints were used as sickles was discovered long ago in Egypt by Professor Petrie.

SOME MEGALITHIC WORK IN THE JAINTIA HILLS. By J. H. HUTTON. *Journal of the Asiatic Society of Bengal*, vol. XXII (N.S.), 1926, pp. 333-46.

These interesting observations should be read by those who want to learn about the habits of living peoples who still erect megalithic monuments. A very important point for British archaeologists is that of the megalithic bridges which closely resemble the so-called Cyclopean bridges on Dartmoor, and will doubtless be quoted by some as evidence of cultural connexions between the two areas.

THE BORZOI COUNTY HISTORIES. Edited by A. J. MADGE. SOMERSET, by Phyllis Ward. CHESHIRE, by R. Welldon Finn. Knopf. 1928. 3s. 6d. each.

These volumes are apparently intended to fulfil the same purpose from a historical standpoint as the Cambridge County Geographies do from the geographical. They fall short, however, of what might reasonably be expected at the present day. Many old hackneyed statements that we hoped never to see again are repeated. A map of Roman Somerset shows at least two non-existent Roman roads, and serves up again the imaginary names *Via Julia* and *Via ad Axium*, and the non-existent Axium on the site of Uphill.

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One wonders why the *Victoria County History*, which is particularly important for Somerset, has not been used with better effect. Somerset, for instance, in the 17th century seems to have been completely overshadowed by two marches and battles, and to call the sketch map illustrating this 'Somerset in the 17th century' is simply not true.

A HISTORY OF THE ANCIENT WORLD. By M. ROSTOVITZ. Volume II, Rome. Translated from the Russian by J. D. DUFF. 1927. pp. xiv, 388, 96 plates, 2 maps. Clarendon Press. 21s.

The second volume of M. Rostovtzeff's *History of the Ancient World*, which covers the history of Rome down to the time of Constantine, may cause a certain superficial disappointment to those who enjoyed his earlier volume on the Orient and Greece. The chapters on the prehistoric and early historic period in Italy, sketchy though they are, may contain material unfamiliar to the general reader, but the bulk of the book is concerned with a period so well-known, and with persons and events so familiar that any attempt to review them from a new angle is peculiarly difficult. This masterly sketch is written mainly from the point of view of social and economic history, and the consequent shifting of the angle of vision causes a striking change in the aspect of Roman culture. The traditional labels on the various periods of Roman history, the noble austerity of the Republic, the glories of the Augustan era, the peaceful prosperity of the age of the Antonines, the apparently sudden anarchy of the third century, vanish with the altered perspective. The picture which emerges from M. Rostovtzeff's very fair and unprejudiced pages is one of a slow but relentless destruction of the best by the worst elements in Roman life. The virtues of the Roman patrician and of the Roman small freeholder have doubtless been exaggerated, but that they possessed qualities of great social and economic value can hardly be denied, and the destruction of these classes and the transference of their political functions to unscrupulous financiers, profiteers and bureaucrats and an army mainly composed of half civilized provincials, mark a conspicuous decay of civilization.

The fact is that the comfort and luxury of urban life under the Roman Empire, and the extent of that empire and its highly organized bureaucracy, are frequently assumed to betoken an unusually high pitch of civilization, although they are actually amongst the most serious symptoms of decay. The intellectual life of Rome tells the same tale. M. Rostovtzeff is, I think, inclined to be too indulgent to her in this respect, for, when all is said, Roman art and Roman thought are but pale reflections of the art and thought of Greece, whilst science can hardly be said to have survived into the later period. The fine integrity, the penetrating yet delicate intelligence, the refined taste and exquisite sense of values which were the glory of Greek civilization, are vainly sought for in the civilization of Rome, because that civilization was simply a decadent branch of Hellenistic culture from which the informing spirit of Hellenism had fled. This essential flaw comes out all the more forcibly in the volume under review because the author is obviously not setting out especially to illustrate it.

As in the previous volume, the translation is easy and lucid and at times remarkably graceful, although the pleasure of reading it is lessened by the extraordinarily abundant punctuation. Commas are plentifully sprinkled everywhere and the proportion of colons and semicolons must be almost unprecedented. The value of the book is greatly increased by the excellent illustrations, which touch on every phase of life both in Rome and the provinces. They are accompanied by useful notes which render them independent

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of the text, but a few errors have been passed over, such as the confusion of the coins in plate LXXIX and the mention in connexion with plate LXXIII of an 'appended drawing' which appears to have been omitted.

E. G. WITHEYCOMBE.

KÉMI, REVUE DE PHILOGIE ET D'ARCHÉOLOGIE ÉGYPTIENNES ET COPTES, I. 1. 1928. To appear quarterly. France 80 fr., foreign countries 100 fr.

In *Kémi* Egyptology has acquired yet another periodical, the first part of which has just appeared under the efficient editorship of Professor Montet, the excavator of Byblos. It is to be devoted solely to Egyptological subjects and studies, including Coptic, but excluding Greek literary papyri as well as Mohammedan Egypt. The program, it will be seen, is rigorously narrow, and it will be difficult in practice to adhere to it strictly. Even this first number contains an article by the editor upon the curious imprecatory texts relating to foreign nations inscribed upon potsherds and recently published by Professor Sethe. Professor Montet questions Professor Sethe's Twelfth Dynasty date for them and would prefer to assign them to the Thirteenth Dynasty; he also suggests some fresh identifications of the Semitic names and corrects some of those proposed by Sethe. He is clearly right in identifying the local name in which Sethe saw the Phoenician city of Usu with the Ullasa of the Tel el-Amarna tablets; Mr Gadd, it may be added, has recently shown that Ullasa is the Ullsu of an inscription of Naram-Sin found at Ur. The other articles in *Kémi* are of a strictly philological character. One of them is a review and somewhat disparaging criticism of the new Berlin Dictionary of Ancient Egyptian of which the first part has recently appeared.

A. H. SAYCE.

LA LINGUA ETRUSCA. By A. TROMBETTI. Florence, 1928.

Professor Trombetti's elaborate work, the result of twenty years of labour, was intended to be presented to the International Congress at Florence and consequently had to be put into shape within a limited space of time. Hence we have in it conclusions rather than the reasons upon which the conclusions are based. As the conclusions mean the interpretation of the individual words and grammatical forms of the elusive Etruscan language it will be seen that we have in most cases to accept the Professor's *ipse dixit* for their correctness. At the same time the materials for forming a conclusion are usually given in full; the misfortune is that in the case of Etruscan the materials are so scanty.

One thing at any rate is certain and that is that the book will be indispensable in all future attempts at the decipherment of the language. The materials are brought up to date, the reading of the text having been made as complete and accurate as possible, and the whole book is a model of orderly arrangement and lucid statement. How far the Professor has succeeded in unravelling the mysteries of the Etruscan lexicon is another matter; some of the new contributions which he has brought to it will undoubtedly stand the test of time, but there is much that, to me at least, is unconvincing.

He has, he tells us, adopted a double method, 'combinatory' and etymological. The 'combinatory' is the method of comparison which, where we have no bilingual texts to assist us, is the safest and at all events the most scientific. By the etymological is meant comparison with words of similar sound in other languages. Did we know any other language allied to Etruscan this would be a legitimate and trustworthy method to pursue, but unfortunately Etruscan stands isolated and alone like Basque or Japanese and the more we know about it the more isolated it appears to be. The discovery of the names of

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the numerals, for instance, though even now we cannot allocate their respective values with certainty, has been sufficient to prove this. It is true that there are certain words which are related to corresponding words in Latin, but most of these were borrowed by Latin from Etruscan, while others are Etruscan loan-words from the Italian languages. There is little use in comparing Bantu or Copt or Chinese as long as the signification of an Etruscan word is a matter of doubt.

If it were quite certain that the Etruscans came from Asia Minor a comparison of Etruscan with the Asianic languages might be permissible, though the scientific study of the latter is still in a backward state. But serious doubts have been cast of late upon their traditional origin and Pareti's arguments against it are supported by the late date to which recent archaeology would ascribe the arrival of the Etruscans in Italy. Moreover the discovery and partial decipherment of the Lydian inscriptions have shown that there was little, if any, connexion between the languages of Etruria and Lydia, and that, therefore, the tradition which made the Etruscan people of Lydian origin cannot have been correct. Moreover the earlier Etruscan cities are inland rather than on the coast, as would naturally have been the case if the invaders had arrived by sea instead of land. On the other hand, the Lemnos inscription, which is in an older form of Etruscan, seems to me to show that in the 8th or 9th century B.C. there was maritime connexion between the western coast of Asia and the coast of Etruria, while the tradition which brought the 'Tyrseni' from Asia Minor was at once too early and too positive not to be based on fact. My own view is that we have to distinguish between two periods in the history of Etruscan colonization in Italy, an earlier one which we may call Tyrsenian and which goes back to about 1200 B.C. and a later one which brought their kinsfolk from Asia Minor about four and a half centuries later. It is noticeable that the Etruscans appear to have had no difficulty in establishing themselves on the coast as soon as they wished to do so: there was no one who sought to oppose them.

One great difficulty about Etruscan decipherment is that although we have a multitude of inscriptions they consist for the most part of proper names. The only long text is that on the wrappings of a mummy in the Museum at Agram and since this is necessarily of a ritualistic and theological character it is just the sort of text which is the most difficult to interpret. The only other texts of any length are those of Capua, which also seems to be theological, of Novilara which Professor Trombetti is, I think, right in regarding as a forgery, and of Perugia on which light has been thrown by the discovery that the word *naper* that plays such a prominent part in it is explained by Festus who tells us that it was a measure of length (Lat. *funiculi*). We may perhaps further add the inscription on the leaden plate of Magliano.

It is astonishing that in spite of this paucity of materials so much should nevertheless have been accomplished in the way of decipherment, and that the signification of so many words should have been fixed with certainty. The fact that most of these are words in common use like *klan* 'son', *sech* 'daughter', *avil* 'year', helps to emphasize the isolation of Etruscan and bears the same testimony as the numerals. Along with the determination of these common words has naturally gone the determination of certain pronouns and several of the grammatical forms, to which Professor Trombetti has now added a further number.

He pays a just tribute to Torp, to whom was due the larger part of the progress in decipherment made of late years. He accepts, in fact, most of Torp's identifications, making them a starting-point for his own. How far he himself has extended them is for the future to decide. His sections on the phonology, morphology and grammar of the

language certainly show a considerable advance upon his predecessors. They are followed by what is the main subject of his volume, the explanation and decipherment of the texts of the Agram mummy, and this again by an analysis of the longer and shorter inscriptions. At the end comes a good index.

To his list of words I would add *Chosfer*, which in the *Liber Glossarum* is given as the Etruscan name of the month of October. I am inclined to compare it with the numeral *ceap-* which, we know, must represent one of the numerals between 6 and 10. A comparison with the two other numerals *semph-* and *nurph-* (which belong to the same series) indicates a connexion with *hi*, the name of one of the first six numerals, as found upon dice.

A. H. SAYCE.

BABYLONIAN AND ASSYRIAN SCULPTURE IN THE BRITISH MUSEUM.

By H. R. HALL. Paris and Brussels: G. van Oest. 1928. 63s.

This is indeed an *édition de luxe*, a truly sumptuous work, with large type, fine paper and first-class photographs. The introduction and description of the plates are by Dr Hall, as well as the selection of the plates themselves, and their excellence may therefore be taken for granted. We begin with some crude examples of Sumerian art, if art it may be called, and end with the somewhat emasculated Assyrian art of Assur-bani-pal. As Dr Hall points out, in the case of Assyrian art we must go to the earlier art of Assurnazir-pal if we want 'distinction and character', even though it is also characterized by a callous hardness, both moral and aesthetic. But at no time do we find in the sculptural art of Mesopotamia that humanity and appeal to the affections which is so attractive in the art of Egypt.

Dr Hall draws attention to one great point of difference between the sculptures of Assyria and Egypt. To the Assyrian 'Semitic mankind must have looked very much alike', just as a flock of sheep looks to ourselves. Portraiture, so highly developed at an early date in Egypt, did not exist; on the other hand, there was a meticulous observation of details in the matter of dress and the like. The Assyrian was pre-eminently practical and it was to the details of practical life that he devoted his observation. This accounts also for the absence of what Dr Hall calls the thaumaturgic element in Assyrian as compared with Egyptian sculpture. It must be remembered that the Assyrian king was a military leader, not a son of the Sun-god as in Egypt, or even a high-priest or commercial trader as in Babylonia, and the Assyrian kingdom itself was an armed camp.

The sculptural art of Semitic Babylonia differed again from that either of Sumer or of Assyria. The specimens of it which have survived from the age of Sargon of Akkad may be immature, but they strike a true note and have none of the effeminacy which is the chief fault of the later Semitic art of Babylonia. How far they may have influenced the neo-Sumerian art of Gudea it is at present difficult to say; in the latter we have what seem to me the highest achievements of Assyro-Babylonian sculpture. The statues found at Tello combine truthfulness to nature with an air of solid virility.

But with a few exceptions the sculptural art of both Babylonia and Assyria, when compared with that of Egypt, more especially of the Old Empire and to a less extent of the Middle Empire, does not appear to me to rise much above what I should term a semi-barbarous level. The Babylonians were traders and agriculturists, the Assyrians were a horde of ruthless but well-disciplined soldiers, and so far as sculpture is concerned neither of them possessed the artistic instinct. The discoveries at Ur, however, have shown that in early Sumerian days there really was an element in the population which

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could produce and appreciate works of true art, and further excavation may therefore prove that Babylonian civilization was after all not so lacking in the artistic sense as it once seemed to be.

A French edition of Dr Hall's work is appearing in *Ars Asiatica*; it only remains to say that the volume is a delight to peruse and cannot be neglected by anyone who is interested in the ancient culture of Mesopotamia. The photographs are themselves masterpieces of artistic and accurate reproduction. A. H. SAYCE.

NOTE ON THE ZAAMENKOMST SLAB. By DR SIDNEY H. HAUGHTON. Transactions of the Royal Society of South Africa, vol. xiv, part 3.

This brief note is accompanied by two fine plates, one of them in colours, showing a slab decorated with remarkable polychrome paintings. It was found in a cave close to Zaamenkomst Farm, at about twelve miles from Maclear (Griqualand East). It lay in two pieces, the painted side down, at a spot having no signs of occupation. Nothing for that matter is said of the contents of the ashes found in other parts of the cave. There were no paintings on any other slabs; on the walls, however, were some of a wholly different technique. That of the slab, now in the South African Museum, is polychrome, and very remarkable. The scene depicts a herd of seventeen elands, among whom are running a dozen hunters armed with bow and arrow and also, according to the author, with 'battle-axes'—which last however I do not see in the fine reproductions attached to the work. As for the feather head-dresses, which, with the 'battle-axes', cause the author to believe the human figures to be Bantus, they resolve themselves into three marks behind the head of a single hunter which might represent arrows. For that matter, Dr Hamy reported previously that certain Bushmen wore their reserve arrows around their forehead held in place by a band, which arrangement might give the impression of feather head-dresses.¹ Two of the human figures wear long narrow white breech-clouts, which recall a phallic sheath.

The elands are drawn four times with numerous lines around their mouths, which might represent foam, sometimes blood-flecked, from wounded animals.

The slab may have fallen from the ceiling and be a fragment of a vanished decoration, or it may have been painted separately like those found covering graves in some caves on the coast, published by Perinquey. The frescoes should be considered, in my opinion, analogous to the most perfect groups copied by Miss Helen Tongue in the neighbouring region of Basutoland (see her two chromocolotypes and photographic plates 1, 2, 4, and plates 2, 3, 11, 16, 18, 22, 24 [in part], 25, 27, 36, 44; one finds again on plate 22 the drawing of foam on the mouth). These frescoes, often underlying frescoes less fine, and sometimes overlying others which are very archaic (see von Luschan²), depict only hunting scenes and never any human types other than Bushmen or Strandloopers. I see no reason to attribute them to so late a period as that of the Bantu migrations, but the presence of a phallic sheath cannot but recall the Lybians of whom other remarkable drawings from Rhodesia have recently been published.

One must thank the author for the excellent illustrations.

HENRI BREUIL.

¹ See, for example, Cartailhac et Breuil, *La caverne d'Altamira*, fig. 140, p. 184, and Verneau, *La race humaine*, fig. 270, p. 344.

² Felix von Luschan, *Über Buschmann-Malereien in den Drakensbergen*. *Zeitschrift für Ethnologie*, 1908, p. 669, taf. x-xiii, especially taf. xi. 1.

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THE ARCHAEOLOGY OF THE VAAL RIVER GRAVELS. By A. J. H. GOODWIN.
Transactions Royal Society of South Africa, vol. xvi, part 1.

The author first devotes several pages to what is known of the gravels and terraces of the Vaal from the works of Penning, du Toit, Wagner, Johnson, and Haughton. This shows that there are probably three or four of these terraces. The oldest of these is at an altitude of 500 feet above the present rivers and is older than their system, but contains neither fossils nor palaeoliths. There is another at 200 feet, then one at 70 feet. This last has yielded as fossils *Mastodon*, *Equus cf. Zebra*, *Damaliscus*, *Hippopotamus amphibius* (var. *Robustus*) and *Yridina*. From this Haughton came to the conclusion that this terrace could be placed in the oldest Pleistocene; it contains, at all events, no traces of any human industry. Such traces are found in the gravels from 40 feet downwards, and as the pieces are often rolled the author rightly concludes that they are in part older than these terraces. The author very wisely draws our attention to the fortuitous association, on the plateau, of objects of different ages, and also to the errors which may be caused by the lateral ravining of the terraces by temporary torrential waters, and the refilling of the channels with derived and rolled elements which may thus be mistaken for older objects incorporated in the terrace. Man's appearance in South Africa thus took place in the course of the Quaternary period, when the Vaal had already taken its present course; one finds the industry attributed to the Bushmen only in the lowest levels.

Next the author devotes twenty pages, which hardly lend themselves to an analysis, to a detailed study of the material from a dozen sites. The two-faced implements figured belong to the following types: heart-shaped, sub-discoidal, lance and leaf-shaped, and to a type which the author calls *biseau* but which we call *hachereau*. The whole, according to the author, belongs to the Stellenbosch industry. It involves the removal of lateral flakes from which by secondary working the two-faced pieces are made. On the contrary, in the Fauresmith industry, the two-faced pieces are obtained from longitudinal flakes and there are no more *biseaux* but many small retouched flakes. Mr Goodwin has a theory of his own about the *biseaux*—that they are not tools, but rather refuse of fabrication of *coups de poing* which had been spoiled in the making. It is possible that he is right in regard to certain pieces (fig. 4 for example) but it seems to me that his theory cannot be made to apply to plate xii (2), plate ix (1), plate vii (1 and 2), identical, as they appear to be, with the Saharan and Cantabrian series with which I am well acquainted. Among these last there is hardly any association between *coups de poing* and *biseaux*, of which a complete series exists from the Levallois flake without retouch to the perfect piece, and to that which had its transversal edge (dulled by use) resharpened by secondary retouch. One can also establish, for the Saharan specimens, analogous series which unquestionably show them to be true implements. I cannot therefore generally admit the hypothesis of Mr Goodwin, which is only applicable to certain cases. The examination just made by me at Cambridge of a series of South African pieces brought back by Mr Miles Burkitt, sustains me in this conclusion.

The illustrations which accompany the text, whether drawings (by Mrs Goodwin) or photographs, are most excellent.

HENRI BREUIL.

DIE FRÜHKRETISCHEN SIEGEL: eine Untersuchung über das Werden des Minoischen Stiles. By FRIEDRICH MATZ. Berlin: Walter der Gruyter. 1928. pp. xvi, 278 and 26 plates.

The majority of the figural motives on early Cretan seals are derived from Hither

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Asia, nearly all the rest from Egypt. Indeed the seals were the channel through which the Oriental motives were transmitted to the later monumental art of the Aegean. None the less in Minoan glyptic the conceptual representations of the Ancient East were infused with a new life and realism. But the contrast between Minoan art and Egyptian or Mesopotamian goes deeper. The 'syntax of the composition' discloses a different psychological attitude towards the surface to be decorated. In ornamenting a round surface the Egyptian liked to single out panels or to dispose his patterns along an axis or cords. In Hither Asia the tendency was to emphasize the circularity of the round surface and therefore to arrange the designs centrally, peripherally or radially and, in the case of a more complicated object, such as a vase, to accentuate the simple geometrical aspects of the figure with ribbons. In Crete on the other hand the aim of the artist was to give unity to the whole surface, linking up its several parts by the use of motives that repeat themselves endlessly, such as groups of double S-spirals arranged at right angles that cover the whole surface and lead the eye indifferently all over it, or by torsion effects that attract the glance from the centre to the circumference or from the base to the rim. (The 'torsion-motive' is defined as 'lines which, running obliquely to the vertical axis of the object encircle it so as to express all its dimensions in a single stroke' which, being interpreted, means lines gyrating round the body of the vase like the thread of a screw).

These propositions, applied first to seals and then to all vehicles of artistic decoration, are expounded with a wealth of illustration, a refined and keen appreciation of aesthetic effects and a really overwhelming erudition in the first part of Dr. Matz's brilliant and masterly study devoted to Minoan, Egyptian and Mesopotamian ornament. In the later chapters the author sets out to show that the native Cretan art, as disclosed by this comparative analysis, really combines two elements—a native Mediterranean (never precisely defined) and an intrusive 'Danubian'.

The surface-unifying principles are essentially Danubian, though they are exemplified even in the art of the first neolithic period in Thessaly (Sesklo), which is thereby contrasted with the Susa-Anau series to which Hubert Schmidt would attach it. The spirals and torsion-motives of Dimini, the Cyclades, Crete and even Anatolia betray so specifically Danubian a mentality that they imply an ethnic element common to the Danube basin, the Aegean and western Anatolia; this can only be represented by invaders from beyond the Balkans. Though Matz here as ever treats his material with critical acumen, he admittedly lacks first hand knowledge of the museum material and even his logic is not irreproachable.

Let us for the moment admit the rightness of his method and the correctness of its application to the material here analyzed. Does it in the least force us to infer a current from Central Europe to explain the facts of Minoan art? The author includes the Sesklo art in his surface-unifying group though it does not employ the spiral system. He derives the Danubian spirals from the continuous chevron band encircling the whole vessel (a purely skeuomorphic pattern, remember, derived from the grass sling in which the gourd was carried). This pattern and the torsion-motive both occur in predynastic Egypt as well as in Danubian Europe. Hence the allegedly Danubian principles of decoration and the ancestor of specifically Danubian patterns are traceable round the east Mediterranean world at a period or in regions in which influences from the north are unthinkable. Why then should they not be ascribed to that 'primitive Mediterranean' art that Matz never fully defines? Why should not Danubian culture still be regarded as a very early offshoot of east Mediterranean as I have argued in the first number of *ANTIQUITY* (1, 79)? (The extraordinary parallelism in ceramic forms and decoration

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observable in the two extremities of the region—the Upper Danube and the Upper Nile—would then denote survivals in cultural backwaters of the archaic substratum from which in the intermediate zones more elaborate forms had grown up). Need the striking Danubian parallels to Minoan and Cycladic design imply more than convergent evolution in two regions where an ancient community of race had been reinforced by commercial intercourse?

Such an interpretation would avoid that forcing of the evidence into which our author sometimes falls in dealing with the Danubian and Balkan material. It is for instance perverse to elevate into a separate group the rare European stamps or *pintaderas* which significantly diminish in numbers the further one goes north and west from the Hellespont, and to ignore the numerous and exact parallels thereto from Elam. Be that as it may, *Die frühkretischen Siegel* offers not only an invaluable store-house of material, but a most suggestive and illuminating co-ordination of the whole.

V. GORDON CHILDE.

THE CITIES AND CEMETERIES OF ETRURIA. By GEORGE DENNIS. With introduction by Prof. W. M. Lindsay. Everyman Series, Dent N.D. (Introduction dated January 1907). 2 vols. 4s.

¹ A reissue of this well known work in so handy a form would be most acceptable were it not for the fact that it is reprinted from the first edition of 1848, and not from the thoroughly revised second edition, which appeared thirty years later, and is no doubt still protected by the Copyright Act.¹ It thus does not embody the results of Dennis' latest researches, and omits the description, e.g., of several tombs at Corneto which were discovered in the intervening thirty years, and one or two chapters which were added to the second edition. Of this fact, however, no hint so far as I have been able to discover, is given, either by Professor W. M. Lindsay in the editor's preface which he contributes (at the end of which both the editions are cited), or elsewhere in the course of the work. Such a proceeding is hardly fair either to the author himself or to the public, who may (as happened to the present writer) meet with unpleasant surprises when they attempt to use it as a guide on the spot. Professor Lindsay's remark that "since it was written a good deal has been added to our knowledge of the subject" is true in a sense which he can hardly have intended. (T.A. in *Classical Review*, xxii, 1908, p. 133).

I wrote this twenty years ago, and, as it still stands, am inclined to reprint it without alteration—only adding that foreign scholars are unfortunately misled into citing this reprint as a fourth edition. (See the selected bibliography in G. Buonamici's and A. Neppi Modona's useful *Guide to Etruscan Antiquities*, Florence, 1928). Ducati in his *Etruria Antica* wisely cites only the editions of 1848 and 1878.

T. ASHBY.

EXCAVATION OF GRAVES AT ACKERGILL, ETC. By ARTHUR J. H. EDWARDS, F.S.A.Scot. Proceedings of the Society of Antiquaries of Scotland, LXI, 1927, pp. 196-209.

This is a record of the valuable work being carried on by Mr Edwards, Assistant Keeper of the National Museum of Scotland. We do not propose to review it but merely to call the attention of our readers to the steadily growing accumulation of data from the work of our Scottish colleagues. Each volume of these Proceedings bears fresh witness to the excellence of that work.

¹ The third edition of 1883 is, so far as I am aware, a reissue of that of 1878.

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Editorial Notes

WITH this issue the second year of *ANTIQUITY* is completed. The support given by our readers shows a steady increase and we hope that this will be continued. The subscription for 1929 is actually not due until next March, but as a matter of convenience a renewal form is enclosed with this number for the use of subscribers (other than those who pay by orders on their banks or who have paid in advance).



Hitherto *ANTIQUITY* has been published punctually on the 15th day of the month of issue, and though this has been printed clearly in our notices some misconception seems to have arisen. We propose to alter the day of publication, and future numbers will appear on 1 March, 1 June, 1 September and 1 December each year.



The title-page, contents, and index to Volume II are included with this number. Particulars of binding cases and terms for binding the volume are given in the notices on the second page of the cover.

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It has been our custom in these notes to comment on important current events in the archaeological world, but during the last few weeks we have been in Iraq and cut off from correspondence and other communication. Under these circumstances the usual editorial notes do not appear, but they will be resumed in the next number. We wish it were possible to write of the wonderful experience of flying over dead cities in this ancient land. What we have seen even in a single flight would, if adequately described, fill more than the whole of this number of ANTIQUITY. In one instance we flew over a dozen towns buried in dust beside the Tigris—their names forgotten and their very existence perhaps unsuspected. The vast city of Caliph Harun al-Raschid (died 809 A.D.), twenty miles long and three or four broad, lies visible in absolute completeness, with its gardens, houses, roads and canals, as plainly as if still teeming with life. Such wonderful flights leave one almost breathless!



PLATE I



NEOLITHIC PILES AT AUVERNIER, LAKE OF NEUCHÂTEL

Pl. C. O. Waterhouse

facing p. 387

The Oldest Swiss Lake-dwellings*

by PAUL VOUGA

WHEN the first lake-dwellings were discovered in 1856, people at once began to explore every site above or below water where the presence of stakes indicated a pile-settlement. These investigations, however, were carried out with no regard for system or stratification; had it been otherwise the problem under discussion would have been solved then. Unfortunately the collection of masses of objects was the main consideration; digging was conducted quite haphazard, and was concentrated on those spots where finds were expected. Thus has it come about that the surface of our Swiss lake-dwellings is so riddled with pits that too often it no longer exists at all save as a memory. But when surface-digging proved barren it often happened that excavations were simply discontinued, with the result that the upper layers or those below remained intact. It was this fact which moved the Neuchâtel Committee for Archaeological Research to undertake a series of systematic excavations, by means of which a limited number of sites would be uncovered layer by layer, with the least possible disturbance. After several fruitless attempts we have at last found, amongst the most important of our Stone Age sites, some which are virgin and have never been dug into; and these have enabled us to determine the succession of the different neolithic cultures.

Without going into details which would be out of place here, we may say that our neolithic civilization, up to and including the Copper Age, is represented by two phases; these are quite clearly distinguishable and are confirmed by all our researches. The oldest of these phases is represented only by a single layer, whilst the second consists of two or three superimposed. One might therefore describe them as Neolithic I and Neolithic II, subdividing the latter into three: IIa, IIb, IIc. I prefer, however, to rely on pure stratigraphy and propose the following terms; Lower (or early) Neolithic; Middle Neolithic; Upper (or late) Neolithic; and lastly, Eneolithic (or Copper) Age.

* Translated by the Editor.

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That is the order in which I am going to describe each of the layers brought to light—layers which, it should be added, are always separated from each other by a barren layer of a certain thickness. Before, however, passing to consider the objects peculiar to each layer (and which are therefore typical of the period represented) it is essential to note that a large number of implements are common to *all* layers, and cannot therefore be taken into account in the determination of a period. This is true of most of the bone objects (piercers, so-called chisels, daggers, awls), of the querns, sharpeners, net-sinkers, even of the axes, whose form is entirely dependent upon the kind of pebble used. The explanation is that, when the neolithic culture first appeared in our country, their ultimate form was already fully developed.

To determine the characteristics of a layer one must take into account not only differences in the forms of objects intended for the same purpose, but also variations resulting from the nature of the raw material used. It is proper also to record the objects peculiar to any given layer. Since, however, these may only be absent elsewhere because they do not happen yet to have been met with in excavation, their importance for purposes of classification is clearly slight: one cannot always, however, pass over such objects. Lastly I may add that it is always rash to define a culture by means of a single object, for the type to which it belongs may quite well be a survival. The attribution of a site or an archaeological deposit to such and such a period only becomes certain when the bulk of the objects found have the characteristics of a known layer. With these preliminaries, let us examine the characteristics of each of the four layers at Auvernier, Cortaillod, Bevaix and Saint-Aubin, or, for the matter of that, at any of the sites susceptible of excavation within the Neuchâtel region.

1. LOWER (OR EARLY) NEOLITHIC

The archaeological deposit containing traces of this first occupation of our shores always rests upon the lacustrine clay or 'blanc-fond', which forms the natural soil. It occurs today at a depth of a metre below the mean level of the lake, or, on the shores, at a depth varying between one and two metres—the depth depending upon whether the site was occupied throughout the neolithic period or for a part of it only. Its thickness is equally variable, according to whether one is exploring the centre or margin of the site; it has however, up to now, never been found so strongly developed as the Middle Neolithic layer—proving, it seems, a shorter length of time for occupation.

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Contrary to all expectations, the objects found in this ancient layer are, for the most part, of a much more advanced technique than those found in the upper layers. This is particularly true of the pottery. The establishment of this irrefutable conclusion has dealt a very serious blow to the purely typological system of classification, based on progressive improvement.

To bring out the essential differences between the layers, that is, between the cultures, I will describe first the results obtained by comparing the objects common to all phases—such as axe-holders, flints, pottery—and then give an account of the peculiar features which are to be attributed to the disuse of certain objects, or to the invention or adoption of a new implement or a new ornament.

A. Axe-holders (gaines de hache). The axe-holders of the Lower Neolithic belong to three different types, not one of which persists entirely into the subsequent cultures. By far the commonest type—the only one which may have continued in occasional use later—consists of a holder with a rudimentary spur, recalling the butted holders (*gaines à talon*) of the later periods, but with this capital distinction—that the butt is never separated from the top of the holder by even the smallest stop-ridge; so that there is really no butt at all properly so called, but only a gradual thinning of the end to be inserted in the handle (figure 7: E).

But the principle of the stop-ridge was not quite unknown to the older neolithic people; for it appeared in the second type of holder—a very rare one it is true—of the kind called 'with perforated butt' (*à talon perforé*).

Lastly, the third type, used also for hafting chisels, consists of a rather long horn, as straight as possible, whose blunt end was inserted in a hole made in a wooden club-shaped handle. It is for this reason called the 'intrusive holder' (*gaine perforante*). [Figure 7: M].

It sometimes happens that, in order to grip the holder more tightly in the haft, the former was grooved to enable a pin or bolt (*goupille*) to be inserted; that is so, for example, with the intrusive holder figured by de Morgan in *L'Anthropologie*, 1920, p. 499.

B. Flint. Apart from a few rare points and occasional scrapers, most of the flints are to be described as 'Magdalenian' blades, with one-sided retouching in the great majority of instances. But the feature which on our sites is specially characteristic of the Lower Neolithic flints is the material itself; this is of a dark brown colour, semi-transparent at the edges, and it does not seem to have come from

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local deposits, where the flint is invariably opaque and generally either white, dusky or black. (Figure 7: H, J, K).*

C. Pottery. What strikes everyone who has the opportunity of examining the material from the lower level is undoubtedly the excellence of the pottery. The shapes, texture and firing are all remarkable

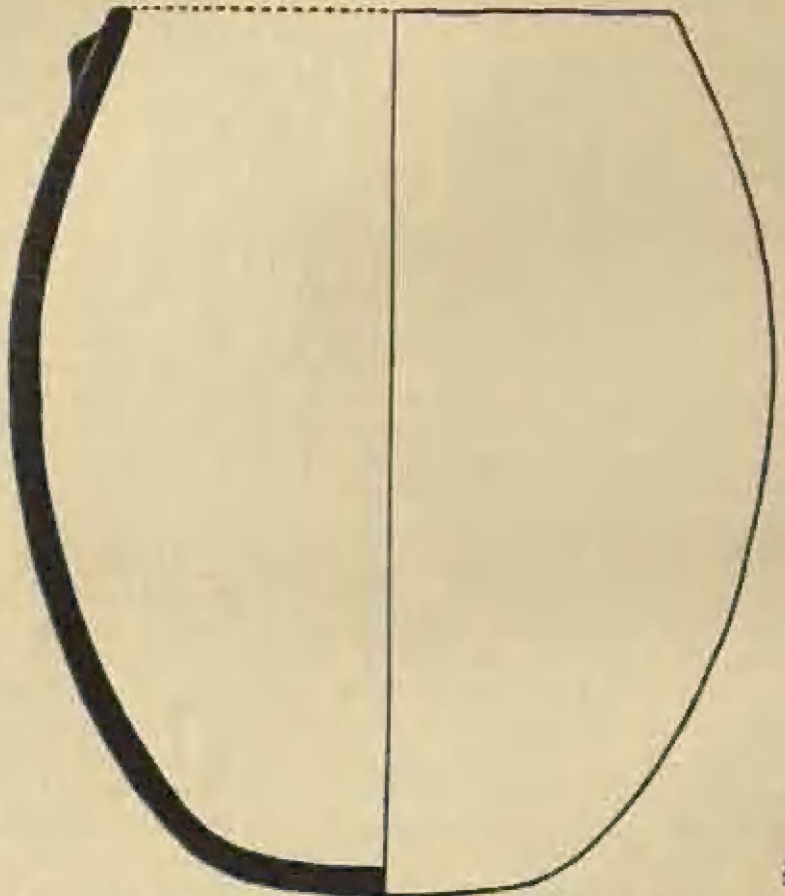


FIG. 1. POT (509) FROM PORT CONTY, NEUCHÂTEL, LOWER NEOLITHIC LAYER

and reveal a profound knowledge of an art which is certainly not in its infancy.

Although complete vases are extremely rare, it is possible from fragments to acquire an exact knowledge of the forms in use. Two

* H and J are of black and K of yellowish flint.—Ed.

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prevailing types may be distinguished:—The bowl, generally round-bottomed, rather small in size (fig. 1), and small pots with a flat-bottom (fig. 6); and the globular pot, with slightly constricted neck and more or less projecting rim (fig. 2). Most of the globular pots have, for handles, knobs which are often perforated and which are set round the

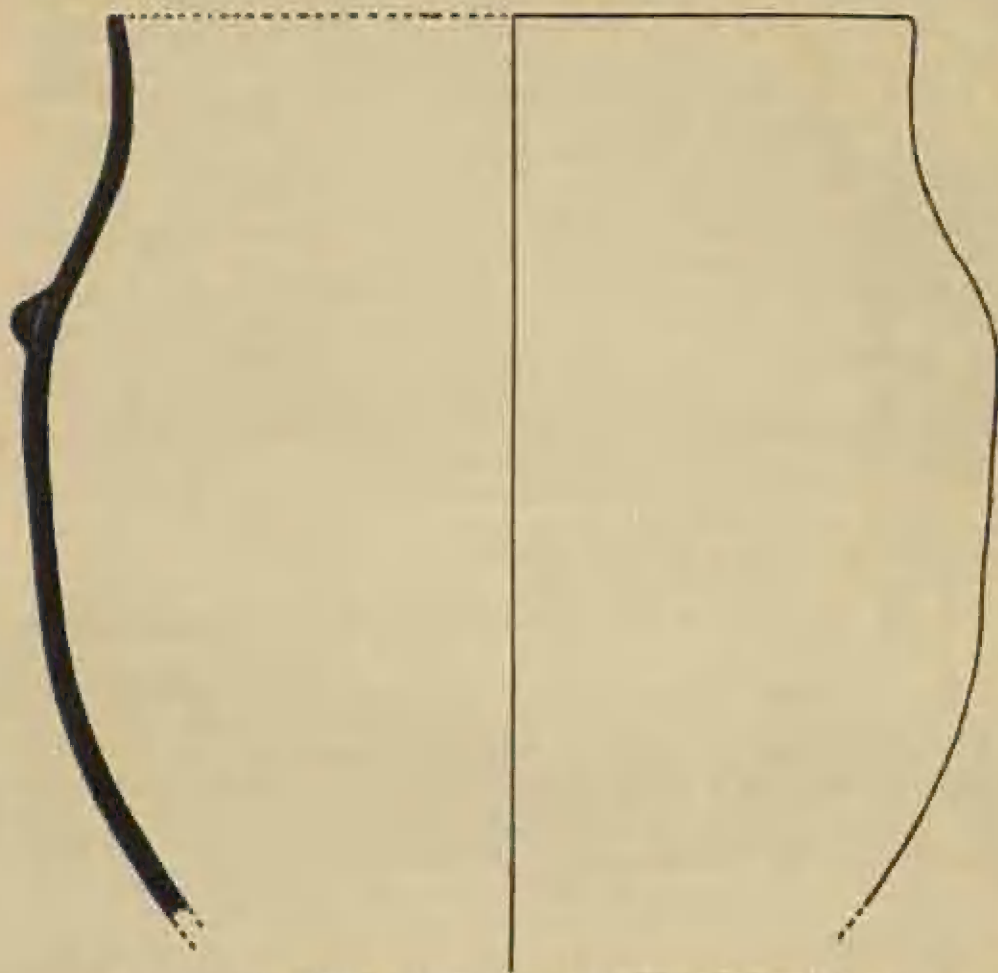


FIG. 2. POT [548] FROM FORT CONTY, NEUCHÂTEL; LOWER NEOLITHIC LAYER

shoulder. The smallest of these vessels usually have, in place of perforated knobs, a series of lugs placed round the upper part of the neck, right on the rim, which when set closely together form a regular ornamented motif (fig. 7 : A).

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The texture is very often remarkably fine ; only the largest vessels have a thick base, in which may be seen quartz fragments mixed in the clay. The commonest colour is black, often burnished, fallaciously suggesting Bronze Age vessels. One finds, however, every shade of colour ranging between black and brick red, according to variations in the firing.

But the most striking characteristic of the pottery of the lower layer is the firing, which is really perfect. Whereas the potsherds from the middle layer, and even those of the Late Neolithic, crumble for the most part the moment they are removed from the habitually damp soil, those from the lower layer are free from all trace of decay, and ring when struck like modern crockery. This is clear proof that the paste has been thoroughly fired, and not merely superficially heated, as we shall see was the practice during the succeeding periods.

With the exception of five fragments, the potsherds recovered are entirely without ornament. It is possible, however, that certain vessels may have borne a linear decoration painted in black on a greyish background ; but only further discoveries can settle this. The ornamented fragments have parallel rectilinear incisions, which may well have been merely proprietary marks. I would mention, however, a tiny fragment, coming from Cortailod, whose decoration consists of a strip of bitumen applied to the neck and incised with a double row of 'wolf's teeth' partially filled with red ochre.

Besides these typological criteria, the Lower Neolithic civilization is marked by a series of features which up to now have occurred in it alone and which seem peculiar to it. Observe, for instance, that the prevalent form of ornament consists of small perforated bones (fig. 7 : c), such as are commonly used amongst some of the black peoples of today. Besides these necklace-beads, the excavations have yielded a certain number of beads of wood and ivory, generally round. Use was also made of boars' tusks, perforated at each end and recalling the bowmen's wristguards of the Copper Age, though these latter are of course bigger and broader (fig. 7 : l). Possibly during this period the place of wristguards was taken by long thin bone blades, bent in some way that I cannot explain, also with the two ends perforated (fig. 7 : n).

Up to the present the investigations have only yielded three triangular flint points which might have served as arrowheads ; but it seems probable that the flint-tipped shaft was more usually fitted with a sharp flake. As arrowheads there was also used a double-pointed bone, which is thoroughly characteristic of the layer, and which never appears

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in the upper deposits (fig. 7: G). Although it is always dangerous to draw any conclusions whatever from negative evidence, I must call attention to the fact that, in the numerous excavations made up to now in the Lower Neolithic deposits, there has never been found the smallest trace of spindle-whorls, whether of baked clay or of stone. And yet they abound in the upper layers! It seems, therefore, justifiable to conclude that the spindle-whorl was unknown in the Lower Neolithic, although spinning and weaving was certainly practised, as we know from the numerous remains of woven materials.

2. MIDDLE NEOLITHIC

It is to this stage of the Neolithic period that the Swiss archaeologists, beginning with Désor, gave the name 'bel âge de la pierre', a phrase to be abandoned now that we are familiar with that Lower Neolithic which the first excavators hardly ever had occasion to reach. This lower layer has been ignored for so long that one may claim on behalf of the Neuchâtel Committee for Prehistoric Archaeology the credit of having brought it to light for the first time by their recent investigations. It has remained unnoticed because it is always separated from the middle layer by a thick deposit of sand or barren clay. Now, on reaching the top of this clay, the older excavators imagined they had touched virgin soil; consequently they stopped work.

Since I propose to refer later to the origin of these barren deposits, I shall pass on at once to the archaeological deposit forming the middle layer. This deposit, much the most important of those met with, sometimes attains a thickness of more than a metre; its essential constituent is vegetable débris with which is mixed, as well as pottery, a large quantity of bones, chips of stone (the by-products of axe-making) and the remains of habitations generally destroyed by fire. It is what the older excavators picturesquely called the 'lake-dwellers' midden' (*fumier lacustre*).

The characteristics of this layer may be summarized under the following headings:—

A. AXE-HOLDERS. When we reach the middle layer, we have occasion to distinguish those holders which were intended to hold *axes*—that is to say stones whose cutting edge is parallel to the handle—from those which were to hold *adzes*, whose cutting edge is at right angles to the handle and which were mainly used for barking or planing.

The characteristic axe-holder is of the butted type with a long spur (fig. 8: K); it is generally large and introduces a new method of

hafting, or rather a much securer attachment of the holder in the handle, which latter has a bulging shape, tapering more than in the preceding type. The spur which rests against this longer handle contributes greatly towards stability, and helps to make the implement a homogeneous whole. This is further achieved by the thongs which, reinforced by bitumen, generally complete the attachment.

Besides these long-spurred holders, we find appearing—probably as tools of less force—the butted type characterized by the absence of a spur (fig. 8: H). But, whatever the type used, the holders of the middle layer always have a stop-ridge, to prevent them from being forced into the handle.

The adze-holder consists of a horn cylinder, hollowed at the two ends so as to hold the stone at one end, while in the other was inserted the crooked end of the handle, this being bent either by art or nature (fig. 8: G). Clearly this method of hafting offers much less resistance than the preceding one; and it is easy to see that the shaped stones would be much smaller when they served as adzes; it was for such purposes that they used the nephrites and jadeites which are the joy of collectors. It is to be observed however, in this connexion, that in spite of many statements to the contrary, the axes of this fine material are not more common in the 'bel âge de la pierre' than before or after it; indeed, recent and precisely dated excavations show, on the contrary, that they may become more and more rare the further we get away from (*i.e.* above) the lowest layer, which itself contains the largest number. They have however a tendency to become more numerous again in the Copper Age.

B. FLINT. The flint-work is appreciably richer and more varied in the Middle Neolithic than in the Early Neolithic. It provides a series of objects, some of which are typical of the layer and are figured here with a short description. But the most remarkable feature is the material used. Whereas in the lowest layer, as we said, the flints are small and of a semi-transparent brown, those of the middle layer on the contrary tend to be large and are invariably opaque. They are, with rare exceptions including objects 'de luxe', of local flint, whose colours—white, grey, dusky or blackish—are known and recognized by geologists.

The implement of most frequent occurrence is a wide stumpy scraper, usually convex. The 'type-fossil' of flint is the arrowhead, which in this layer adopts two equally abundant forms—the triangle and the lozenge (fig. 8: B, E). One finds rudimentary points associated

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with really perfect types, and triangular points with a straight base as well as points with a slightly hollowed base; so that not the least importance can be attached to fineness of technique. The recent excavations have yielded two of these points, still adhering to a piece of the wooden shaft (fig. 3: A). This latter was itself carefully pointed, and very accurately cleft in the middle to form a kind of beak inside which the flint was put, it being thus wedged along at least two-thirds of its length. Finally the barb was attached to the shaft by means of a lump of bitumen symmetrically placed in the form of a triangle or a lozenge (fig. 3: B).



FIG. 3

A is a small pebble set in wood (Cortailod);

B two flint arrowheads held in a coil of bitumen. The points of both are broken and it was doubtless to assist the work of resharpening them that they were thus placed. (St. Aubin).

C. POTTERY. The lake-dwellers of the middle level may have achieved some advance in the manufacture of their axes and arrows; but it is certainly otherwise with their pottery. Shape, texture, firing, everything leaves much to be desired. One gets the impression of an art in its infancy. To the variety of types of the preceding period succeeds a deplorable uniformity. The cylinder seems to have been their sole model in the construction of vessels; one can hardly speak of a belly, so flat are the few fragments of any importance which have come to light (figs. 4 and 5).

As for the paste,* it is almost always so thick that the fire could not

* Pâte: I have usually translated this 'texture'. It means the material of the pot, called by potters the 'biscuit'.—ED.

penetrate right through, so that much of it has remained unfired. If we examine the section of a potsherd (see plate II), we find that its centre is unfired, and that only the outer portions are hardened by firing. Since, in addition, the surface of the inside is appreciably harder than that of the outside, it seems to follow that the vessel was mainly fired by means of a fire lit inside it.†

Perforated knobs and knobs round the belly are quite unknown in this layer. The only means of holding or suspension was the massive

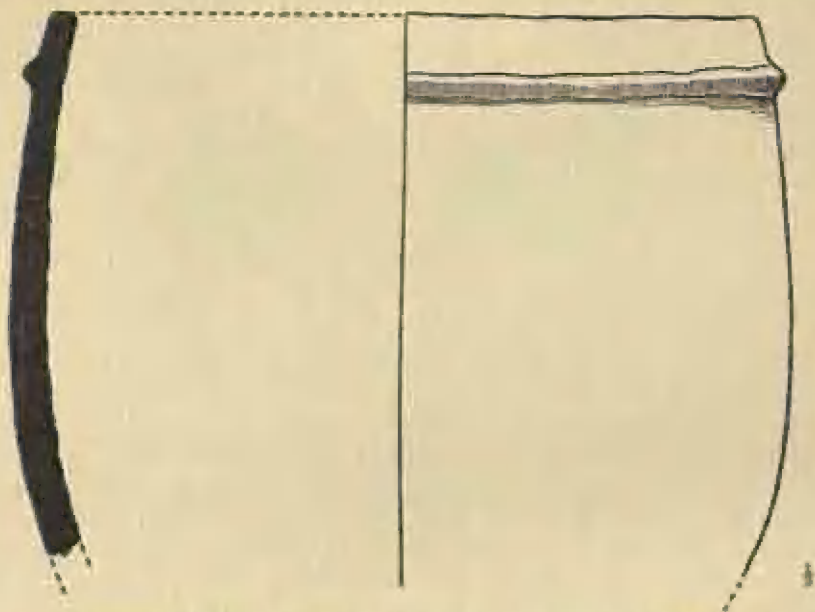


FIG. 4. UPPER PART OF POT (1927) FROM AUVERNIE, MIDDLE NEOLITHIC LAYER

unornamented band surrounding the upper part of the vase (fig. 4), or knobs placed in a row quite near the edge, and made, in most instances, by pinching up the soft clay (fig. 5); whereas those of the preceding period are clearly lumps applied to the already formed vessel.

There is a form of ornament consisting of flat round pellets (3 to 5 millimetres in diameter) applied to the soft clay (fig. 8 : j); there is no other decorative motif in this layer.

† It is suggested that the same result might be obtained by piling the vessels mouth downwards for firing as is done in the Canary Islands for instance. This would account for the fact that the interior is black and the exterior red.—ED.

PLATE II



SECTION OF POTSHERD FROM MIDDLE NEOLITHIC LAYER AT AUVERNIER,
SHOWING LIGHT HALF-BAKED BAND IN CENTRE

Pl. C. O. Warehouse

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As I have already said, the middle layer entirely lacks the perforated or notched bone beads, the perforated boars' tusks, and the double-pointed bone implements which were used as arrowheads. On the

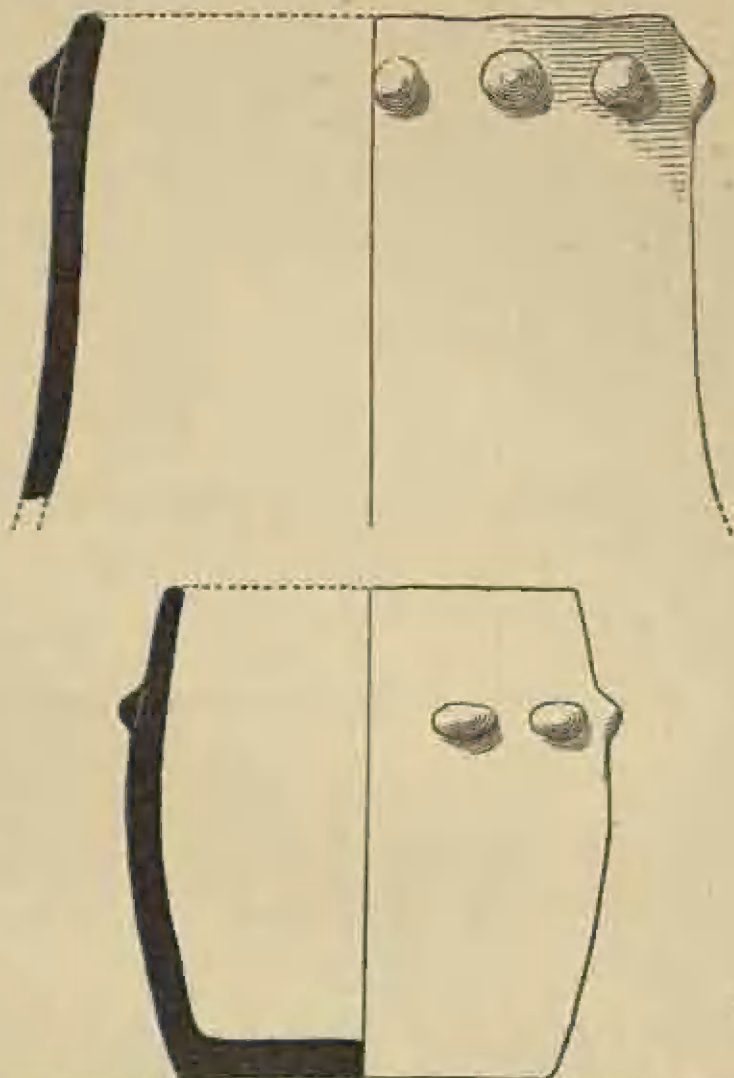


FIG. 5. POTS FROM AUVERNIER (LOWER, NO. 1064); MIDDLE NEOLITHIC LAYER

other hand it contains the first spindle-whorls, mostly of stone but occasionally of burnt clay (fig. 8: L). Like the pottery, they are unornamented.

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The bone arrowheads of the middle layer are clearly distinguishable from those of the preceding period in that they are generally much shorter and blunter, and above all by the fact that they are always crooked at one end, so as to produce a rudimentary barb (fig. 8 : F). Let me finally point out, as belonging to the middle layer, the art of boring large hard stones, which is responsible for the creation of triangular axe-hammers about 15 centimetres (6 inches) long and 3 to 4 centimetres thick (fig. 10 : B).

3. UPPER (OR LATE) NEOLITHIC

Before setting down the essential peculiarities of this layer, it is necessary to state that it forms, so far as the evidence goes, the normal evolution of the preceding layer, of which it is only an advanced phase. It lies above it and is separated from it by a barren deposit at present unexplained, but which might well correspond with a raising of the level of the lake of purely natural origin. One fact at any rate emerges from a study of the layer made on the spot—the sites where this layer is found actually superimposed upon the preceding layer are very rare. (The only sites within my knowledge where this superposition occurs are the stations of Saint-Blaise (?), Auvernier and Bevaix). As a rule this late layer forms the base of the archaeological deposit of the Copper Age, which is usually found inland. This would prove that the water level of the lake stood at a higher level during the Late Neolithic than during the Middle Neolithic period.

So far as its formation is concerned, the archaeological deposit at Auvernier is of the same character as that of the preceding layer, with the reservation that it is not so thick and is less stratified.

As typical of the Late Neolithic which, I repeat, may contain all the preceding types as merely so many survivals, it is necessary to note the following :—

A. AXE-HOLDERS. Besides the spurred type, which persists (fig. 9 : c), but is becoming gradually rarer, the butted spurless type prevails. Adzes on the other hand, are no longer hafted in socketed cylindrical holders ; doubtless the weakness of this method of hafting was recognized, for there was substituted for it another which consisted of shaping the base of the expanded end of the handle into a trapezoidal butt (tenon) ; against this butt (tenon) was then placed the elongated butt of a holder, recalling the butted holder ; then the base of this elongated butt was hollowed out, and at a later stage of development split, to fit into the butt (tenon) ; and one had as a result the typical

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adze-holder which obtained from the Late Neolithic onwards—that with a split or cloven butt (fig. 9: B, D).

B. FLINT. All that we can definitely state today about the flints of the Upper Neolithic is that, in a general way, they are more finely retouched than in the preceding phase, and that in addition the shapes are improved; all the same there are no essential differences to be observed. We may note however the first appearance of the barbed arrowhead, evolved, as a long series of intermediate forms show, from the lozenge-shaped point whose side-angles developed gradually until they finally stood out well from the rounded tang (fig. 9: F).

C. POTTERY. The most noticeable advance in this layer is in the pottery, which, although still very thick and rather badly fired, is yet much harder than that of the Middle Neolithic, and begins to have decoration applied by pressure on the clay while soft. Unfortunately the fragments so far recovered do not permit us to speak of any sort of style. Handles remain unknown; suspension or grasp is still provided for either by a raised band or by a series of knobs, which may occur below the rim of the vessels; for the cylinder of the preceding phase is curved towards the top and somewhat swollen towards the bottom, so as to produce a globular shape. In a number of vessels, particularly big ones, the band or row of knobs is replaced by rather pronounced lugs with serrated ornament irregularly applied to the neck (fig. 11: B).

Since the firing is appreciably better than during the middle phase, the prevailing colour of the pottery has changed from dark brown to black, or blackish, but without acquiring the regular dark shade of the lower layer, or its fine lustrous surface.

Besides the adze-holders with long butts (hollowed or cloven) which form the clearest distinguishing feature of this layer, one may observe the process of transition from the triangular axe-hammer, perhaps used as a tomahawk, to the lozenge-shaped axe-hammer, one end of which, being blunt, was used as a hammer (fig. 11: C).

4. ENEOLITHIC OR COPPER AGE

Whatever may be the opinion of M. Franchet, particularly as the result of his researches in Brittany, there can be no doubt, for one who has investigated stratified lake-dwellings, that pottery occurs much earlier than the knowledge of metal; for metal remains entirely unknown during the first three phases of a period which one may therefore rightly call Neolithic.

The archaeological deposit in which the first copper objects

appear—beads, awls, axes, resembling those of ground stone (perhaps also triangular daggers recalling the flint points, but I have found none of these)—occurs today almost at the level of the surface. Generally the deposit is reached after the removal of a layer of sand or pebbles about 4 to 6 inches (10 to 15 centimetres) thick. Since however it has nearly everywhere been worked to the bottom, it is very difficult to assign it a thickness which might eventually serve as a basis for comparison. Where it occurs clearly undisturbed, I was able to observe, however, that only at the bottom was it clearly stratified; now, as the covering deposit had not been touched, it followed that, if its upper part was not stratified, it was because it had been disturbed before the deposition of the covering layer—that is, at a very remote period. This seems to be explained by the supposition that the site of the abandoned Eneolithic settlement was cultivated by the Bronze Age lake dwellers, who had their settlements much further out in the lake in consequence of a pronounced lowering of the water-level caused by the persistent drought which characterized this epoch.

Typologically, there would be no ground for separating the Neolithic from the Eneolithic, for one evolves normally from the other. Two new elements, however—copper and a particular kind of flint—make their appearance. Since, however, these elements might happen to be present in a find which had to be dated, let us record the new features acquired, adopting the same criteria as before.

A. AXE-HOLDERS. The typical holder for axes meant for heavy work is still that with a straight butt and no spur (fig. 12 : E); for adzes, the only form which survived seems to have been the cloven-butt holder, even more deeply cleft than during the preceding phase (fig. 12 : D).

B. FLINT. Apart from imported flints, which will be dealt with later, the only remarks to be made concern arrowheads, amongst which the kind (fig. 13 : G) with strongly pronounced barbs prevails. (This type however survives throughout the whole Bronze Age and even later). Perhaps it may be found that the notched saw originated during this phase; but the numbers recovered up to now are not sufficiently numerous to establish this.

C. POTTERY. From the few sherds which can with certainty be assigned to this layer, we learn nothing about the precise forms of the vessel used. Two main groups, however, may apparently be distinguished:—those of the first group are rather small dishes or bowls, with thinnish sides, well fired and blackened in the process; those of

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the second are large and served mainly for storing food—the sides are thicker and they are fired to a dark red colour. Fragments of the latter are generally ornamented with parallel incised marks placed along the rim or on the shoulder; sometimes there is an undulating band round the top of the vessel (fig. 13: A); sometimes there may be only protuberances serving as lugs. The small vessels, on the contrary, seem to lack this festoon-like ornament alluded to, and to have only parallel incised marks (fig. 12: G), which, when arranged obliquely and placed close together, approximate to what is called cord-ornament (*schnur-keramik*). Although handles were certainly known at this period in eastern Switzerland, up to the present they have never been met with on a Copper Age site in western Switzerland.

Lastly, it is to be noted that a further marked evolution of form takes place in the graceful serpentine axe-hammers of this period (phase). The truncated lozenge-form of the preceding period is practically replaced by magnificent implements with a pronounced median swelling forming, in the case both of axes and hammers, a graceful curve (fig. 13: C, D). The cutting edge is often expanded so as to form a crescent. Often too the back of the weapon is furnished with deeply cut and regular grooves (fig. 13: D).

But, as I said, the best criterion or test of the Eneolithic is the presence, in this inherited neolithic milieu, of obviously imported copper or flint objects.

A most interesting study (says Forrer) could have been made of the many Copper Age objects found in Switzerland, if we had exact information about their stratigraphical position. Unfortunately this is lacking, and these later excavations of ours have yielded very few metal objects. For the moment I can only remind my readers that they all imitate an ornament, an implement or a weapon of stone or horn, and that their forms are modelled upon such. Nor is it possible here to discuss either the origin of the copper used, or the country where the knowledge of its use was first acquired. I would say only that native copper is extremely rare in our part of the world, and that consequently there can be no question of local discovery when we encounter the first metal objects, however rare they may be. They must then have been imported. And since the flint which remains to be considered was itself imported, let us before discussing the probable distribution centre briefly examine the flint.

In the Early Neolithic the flint used consisted mainly of blades of dark brown flint with semi-transparent edges; in the Middle Neolithic

the flint used was mainly a native opaque variety which is white, 'bistre' or blackish in colour. The majority of the flints belonging to the Eneolithic are made of a translucent honey-coloured substance so easily recognized that it long ago attracted attention, and has been the subject of much research which has been summarized in the writings of MM. de Saint-Venant and Hué. Now the outcome of these researches is that the geological formation yielding flint of this character is to be found at Pressigny in France, in the department of Indre-et-Loire. Should this identification be doubted by a sceptic, it would I am sure be sufficient to observe that these deposits, worked from Neolithic times onwards, are remarkable, not only on account of the character of the valuable raw material, but also for a product of workmanship which Déchelette describes as 'the fine working characterized by oblique, parallel, shallow ripple-flaking'. And our Eneolithic stations have actually yielded several examples of these light-coloured flints, presenting just this characteristic workmanship (fig. 13: F). No further doubts can remain.

Now, if we mark on a map of Switzerland the places where objects of Grand Pressigny flint have been found, we find that they are particularly abundant on the shores of the lake of Neuchatel and the neighbouring lakes of Bienne and Morat; that they are found occasionally round the lake of Geneva; and that in eastern Switzerland they are an extreme rarity. If we make a similar map of the find-spots of copper objects we get precisely the same result. Since objects of copper and those of Pressigny flint both make their appearance at the same moment (that is to say, in the same archaeological deposit) I feel justified, from this remarkable coincidence in time and place, in inferring that the two new features arrived simultaneously as part of the same trading operation. The agent can only have been the exporter of Pressigny, whose wares cannot possibly have reached us from the East. This conclusion is based on facts, and could easily be supported by evidence drawn from France; it follows from it that metal (though the knowledge of it may very probably have originated in the eastern Mediterranean) reached Switzerland, not by the usual route of the Danube or the Rhone but by the western route—Mediterranean, Straits of Gibraltar, the coasts of the Iberian peninsula and France as far as the mouth of the Loire, up the Loire valley—where is encountered the Pressigny deposit,—thence probably along the Saône and Doubs valleys and by Vallorbe, Les Verrières or Les Brenets to the shores of the lake of Neuchatel; whence it spread over the Swiss plateau.

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Such is the conclusion one may draw, it seems to me, from the presence of Pressigny flint in the Eneolithic layer, together with the first, imported, objects of copper. Their multiplication, soon followed by a knowledge of the more resistant and more malleable alloy of copper and tin, was soon to usher in the period which our need of classification rather than the facts themselves makes us call the Bronze Age.

Since I have not got to deal here with the Bronze Age, I might conclude this already long paper; but as for once I am privileged to address a non-specialist public on the subject of our lake-dwellings, I will take the opportunity of trying to put right this important matter of pile-structures. Ought one still, after the last excavations, to let pass as correct the conclusions of the earliest excavators, based as we recognize them to have been upon documentary as well as upon existing ethnographic evidence? Should one allow that structures were built for safety or health, over the water? And should one explain the incontrovertible fact that the Bronze Age structures are built much further out on the lake than those of the Neolithic period, by the hypothesis of an advance in the art of construction?

It would take much too long to set forth again in detail all the reasons why nowadays we regard this hypothesis as erroneous. I shall confine myself to enumerating the most important of them.

(1). The remains of the latest Bronze Age sites are met with today under more than six feet of water; and the regulation of our water-supply 30 years ago lowered the level of the lake of Neuchâtel by a mean amount of between four and five feet. Would it then have been possible for our ancestors to have driven in, right out on the lake and under nine feet of water, the piles which—to the number of ten thousand or so—a lake-dwelling of moderate importance requires?—especially when one remembers that these piles have to penetrate at least a yard into the ground and project more than two yards, to withstand the waves and high floods.

(2). Supposing nevertheless that such was the case, is it conceivable that, under three feet of water only, assuming it to be no greater, the vegetable débris which forms the actual basis of the lake-dwellers' midden would be laid down and stratified? Would it not rather be scattered by the smallest storm?

(3). If however this deposit finally was formed, would it not, so long as it remained under the lake, be of an almost fluid consistency? How then can one explain the fact, many times observed, that on the

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top of the *débris* layer are found huge stone querns whose weight alone should have made them sink right to the bottom ?

(4). Between each successive occupation-deposit on a given site, one can observe a barren layer, devoid of all traces of human activity ; one can hardly attribute to the mere passage of time the formation, *under water*, of this barren layer, in view of the fact that, during the two thousand years which have elapsed since the abandonment of the Bronze Age settlements, time has deposited nothing on the remains of the last lake-dwellers, whose potsherds and other relics are sometimes picked up on the surface.

(5). Further, the comparative study of the culture of the Middle and Late Neolithic and of the Eneolithic proves that there was no hiatus between any of these periods, whilst their respective sites in the same bay are rarely found superposed, but are found more or less far out in the lake.

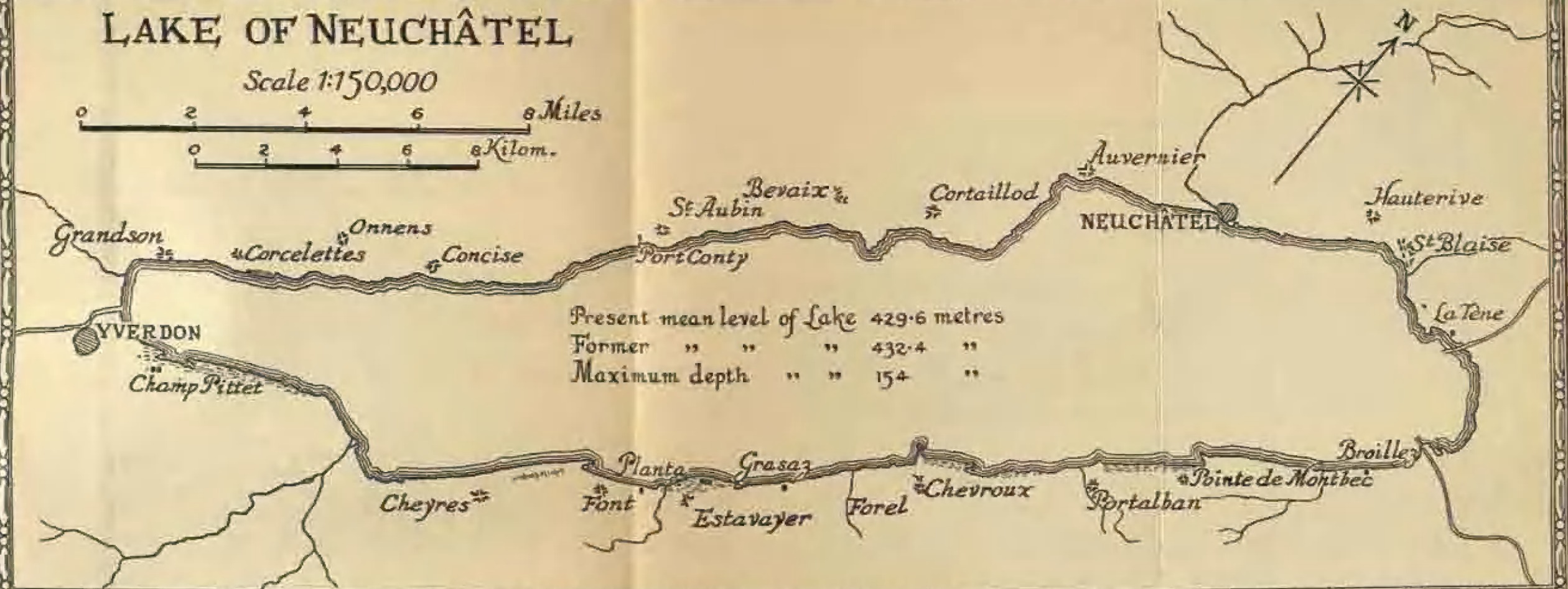
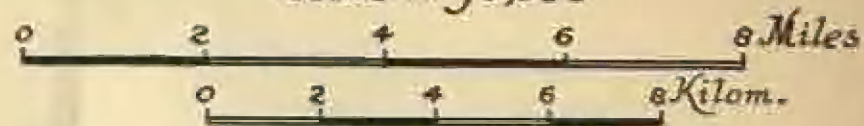
Ought one not, then, to conclude, from the facts stated in the last two paragraphs, on the one hand (in view of the character of the lake-midden) that the pile structures of the Stone Age *were built on the shore and not over the water*, and that they were raised solely as a protection against floods ; and on the other (in view of the removal of each of the successive occupation-sites in the same bay) that the choice of sites was controlled by the level of the lake, which must have undergone important changes in the course of centuries ?

To support this last conclusion, let it be recalled that the recent researches of Scandinavian savants have proved that the Bronze Age can be equated with a long period of desiccation, whose effects, even if they have not yet been fixed geologically in our own country, would produce exactly the conditions described above (§1). In fact, if these habitation-sites are today covered by 6 feet of water, it does not mean that they were built by architectural geniuses ; it means simply that, as a result of the long drought the level of the lake had been lowered by several metres.

Translator's note. The Editor desires to record the fact that the photographs and drawings illustrating this article were all specially made by Mr C. O. Waterhouse, during a visit to Neuchâtel undertaken for that purpose. He wishes to take this opportunity of expressing his thanks to Monsieur Vouga for his kindness on the occasion of his visit. As Monsieur Vouga was conducting excavations at Neuchâtel, it was possible for us to see the actual layers described above in process of being uncovered.

LAKE OF NEUCHÂTEL

Scale 1:150,000



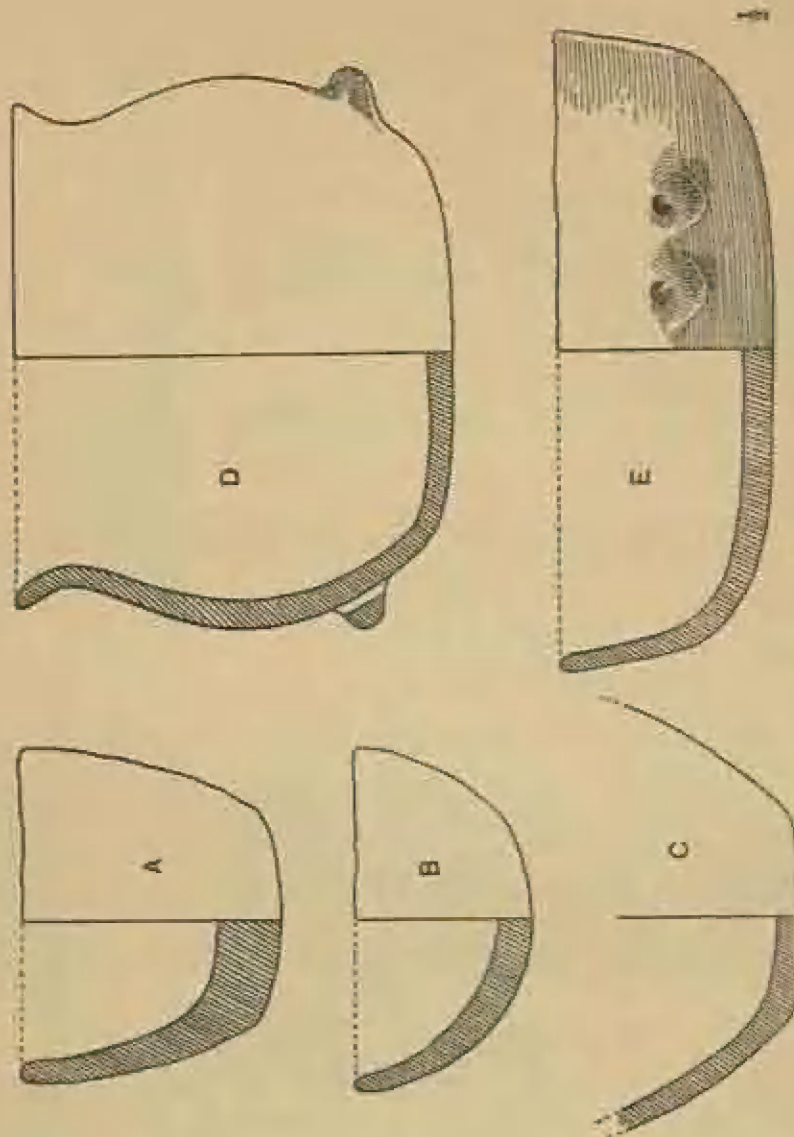


FIG. 6. TYPICAL POTS OF LOWER (OR EARLY) NEOLITHIC PERIOD, NEUCHÂTEL.

- | | | |
|---------------------|---------------------|--------------------|
| A Port Conty [1208] | B Port Conty [1094] | C Port Conty [872] |
| D Port Conty [1229] | E Cortailod [921] | |

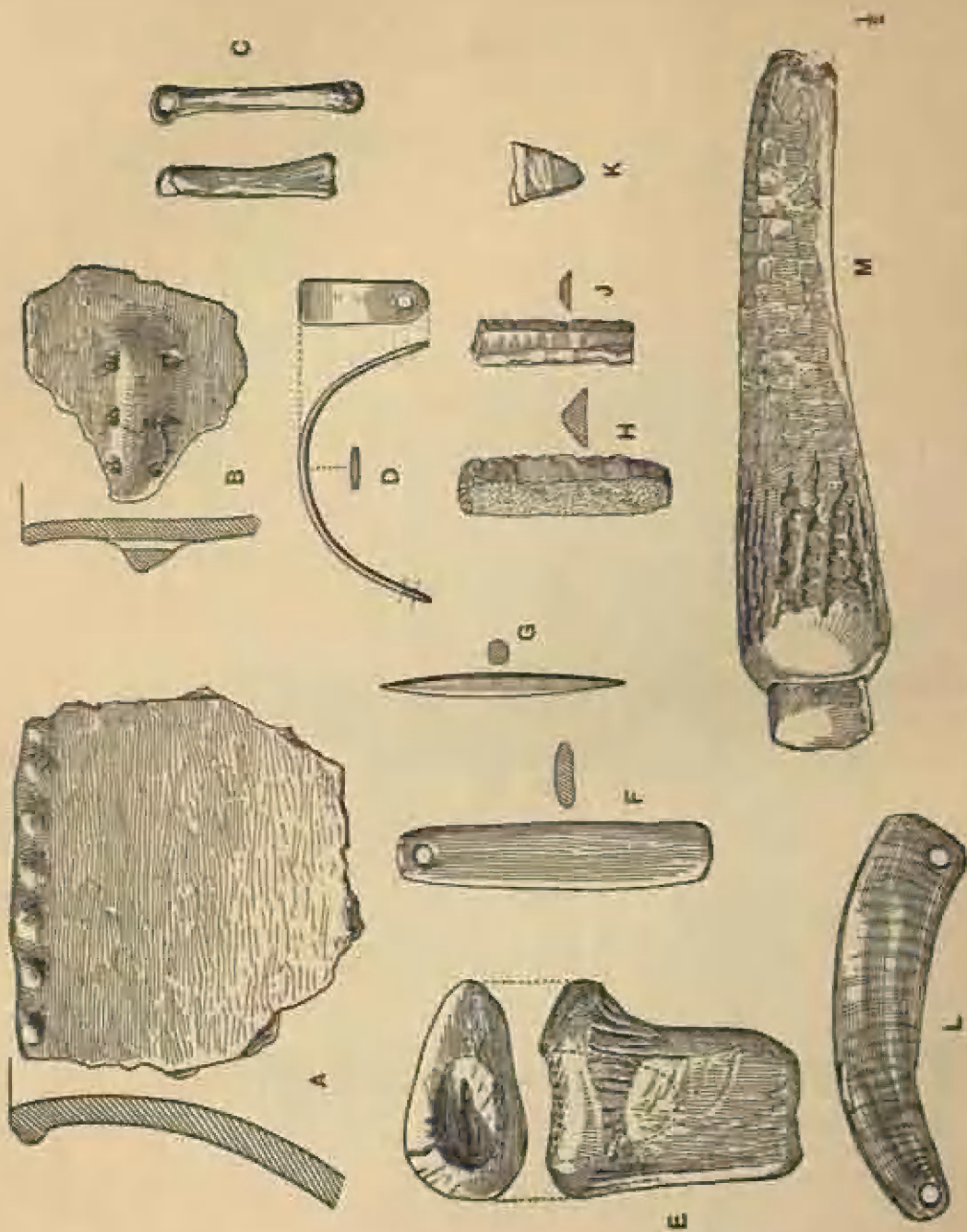


FIG. 2. TYPICAL OBJECTS OF LOWER (OR EARLY) NEOLITHIC PERIOD, NEUCHÂTEL.

THE OLDEST SWISS LAKE-DWELLINGS

EXPLANATION OF FIG. 7

- A Rim of pot, Cortaillod [814]
- B " Port Conty
- C Bone beads, Port Conty [970 and 619]
- D Curved bone plaque, Port Conty [1161]
- E Horn holder, Auvernier [2618]
- F Perforated bone object, Cortaillod [888]
- G Bone arrowhead, Port Conty [328]
- H Scraper of black flint, Port Conty [598]
- J Object of black flint, Port Conty [569]
- K 'Petit tranchet' of yellowish flint, Port Conty [1003]
- L Perforated boar's tusk, Port Conty [572]
- M Horn adze-holder, Port Conty [390]



FIG. 8. TYPICAL OBJECTS OF MIDDLE NEOLITHIC PERIOD, MUSCHATEL

THE OLDEST SWISS LAKE-DWELLINGS

EXPLANATION OF FIG. 8

- A Object of white flint, Port Conty [212]
- B Arrowhead of white flint, Cortaillod [807]
- C Arrowhead of bone, with remains of bitumen glue adhering, Port Conty [90]
- D Arrowhead of white flint, Port Conty [146]
- E Blade of white flint, with remains of bitumen glue, Port Conty [60]
- F Bone arrowhead, Cortaillod [826]
- G Adze of greenish grey stone, Auvernier [1992]
- H Butted holder, Auvernier [1979]
- J Rim of pot with pellet-ornament, Auvernier [2205]
- K Spurred holder, with axe of dark green stone, Bevaix [288]

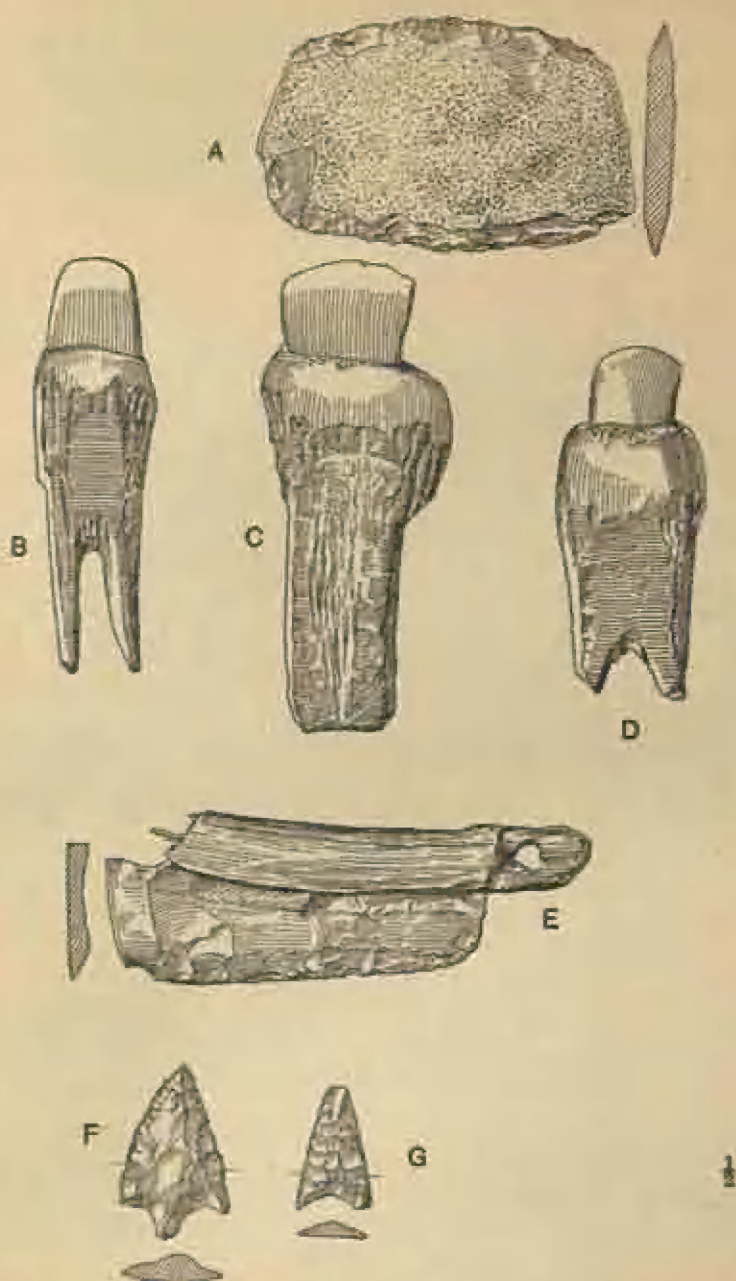
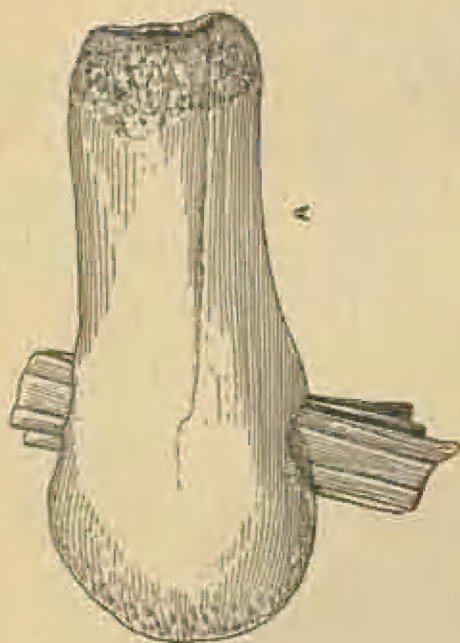


FIG. 9. TYPICAL OBJECTS OF UPPER (OR LATE) NEOLITHIC PERIOD, NEUCHÂTEL.

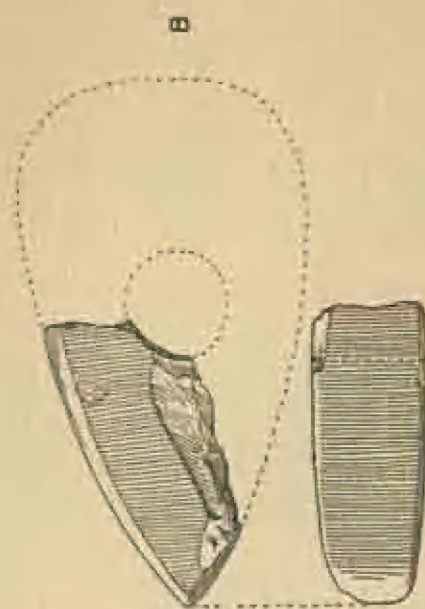
THE OLDEST SWISS LAKE-DWELLINGS

EXPLANATION OF FIG. 9

- A Object of black flint, Auvernier [1651]
- B Cloven holder, Auvernier [2436]
- C Butted holder, Auvernier [1882]
- D Cloven holder, Auvernier [1865]
- E Blade of brown flint, with remains of perforated wooden mount [2547]
- F Arrowhead of pinkish-white flint, Auvernier [2364]
- G Arrowhead of white flint, Auvernier [2748]



A

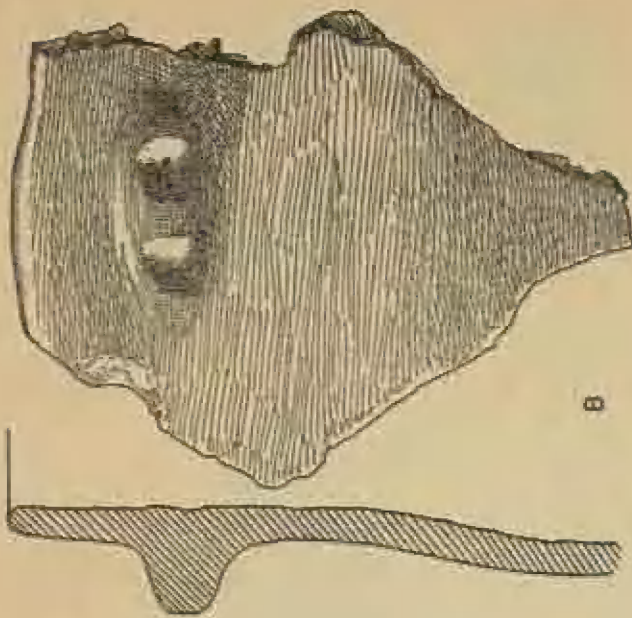


B

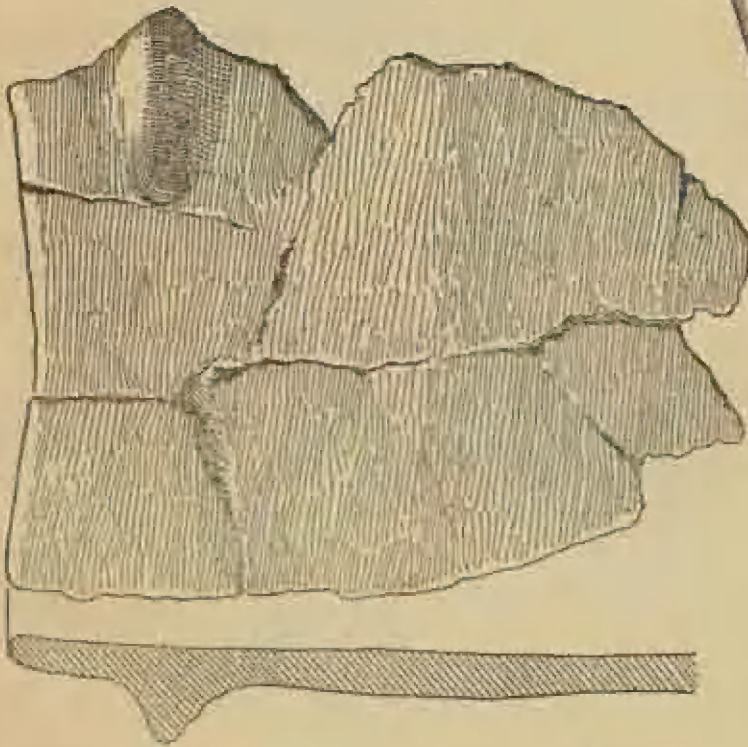
FIG. 10.

A Horn Hammer, Auvernier [2953]

B Portion of perforated stone [2544], Middle Neolithic Layer, Auvernier

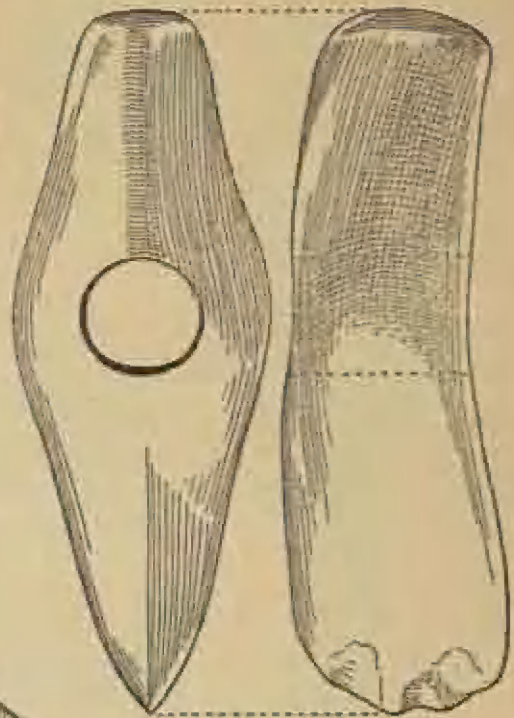


B



A

- A Part of rim of pot, Auvernier [1753]
 B " " " [2402]
 C Perforated axe-hammer of black stone,
 Bevaix [280]



C

FIG. 11. TYPICAL OBJECTS OF UPPER (OR LATE) NEOLITHIC PERIOD, NEUCHÂTEL.

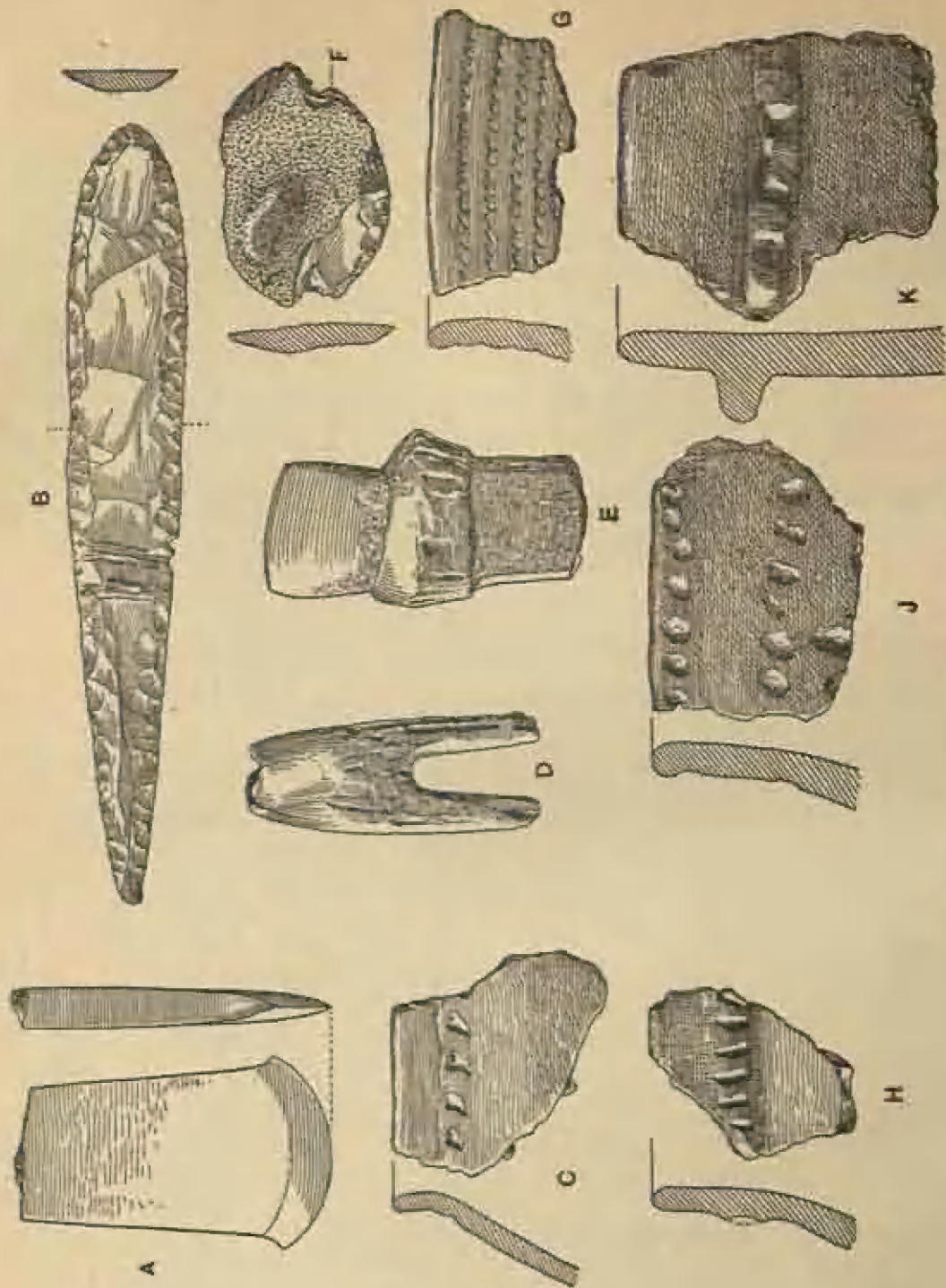


FIG. 21. TYPICAL OBJECTS OF THE NEOLITHIC PERIOD, NEUCHÂTEL.

EXPLANATION OF FIG. 12

- A Copper axe, Bevaix [3003]
- B Blade of Grand Pressigny flint, Auvernier [2752]
- C Part of rim of pot, Auvernier [1598]
- D Cloven holder, Auvernier [1819]
- E Butted holder, Auvernier [1720]
- F Object of white flint, Auvernier [1564]
- G Part of rim of pot, with decoration resembling cord-ornament (*schnur-keramik*)
Auvernier [1565]
- H Part of rim of pot, Auvernier [2220]
- J " " [2333]
- K " " [2219]

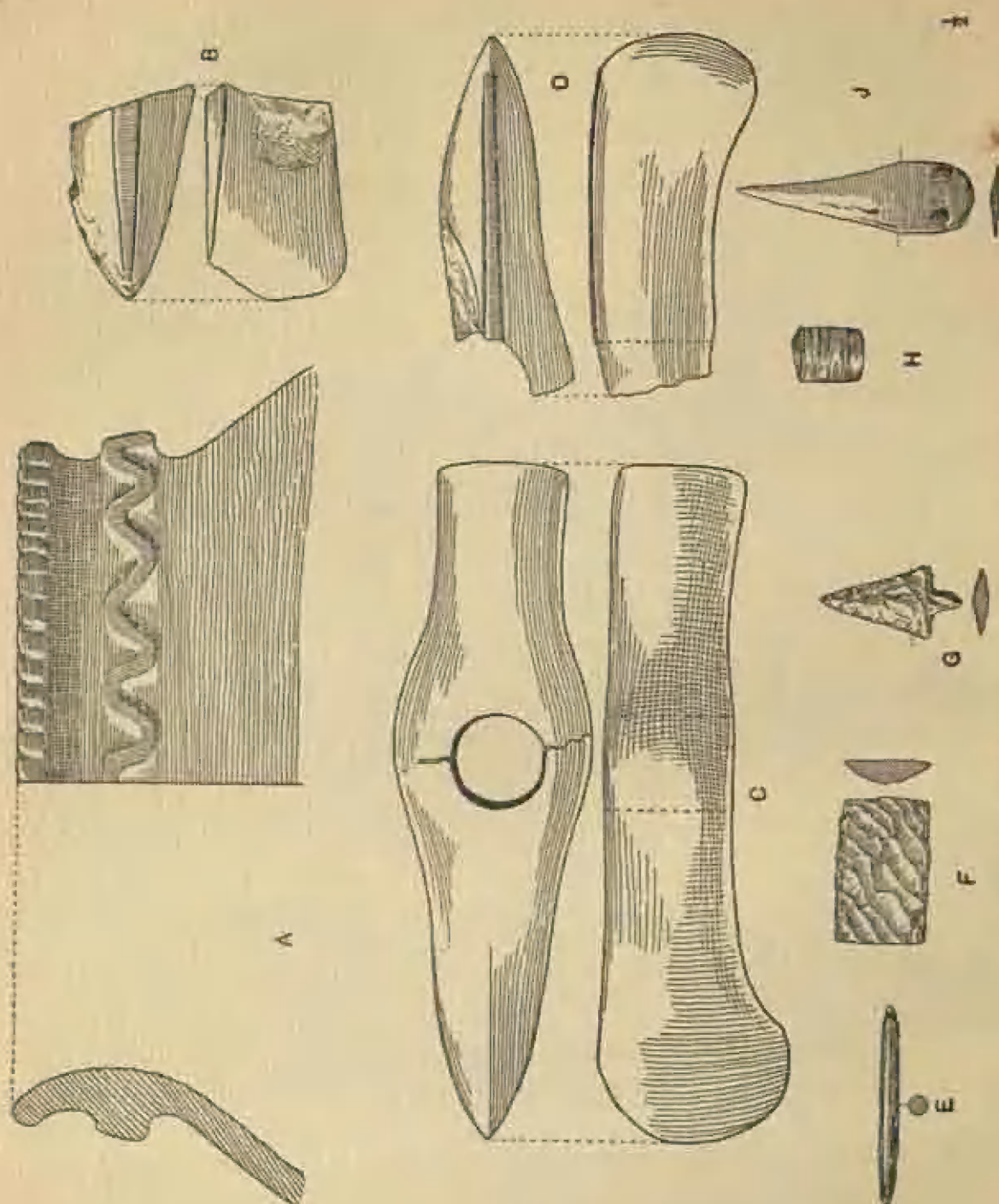


FIG. 13. TYPICAL OBJECTS OF THE NEOLITHIC PERIOD, NEUCHÂTEL.

THE OLDEST SWISS LAKE-DWELLINGS

EXPLANATION OF FIG. 13

- A Rim of pot, Auvernier [1868]
- B Part of stone axe-hammer (black with white mottling), Auvernier [1610]
- C Stone axe-hammer (black with white mottling), Auvernier [1611]
- D Part of stone axe-hammer, Auvernier [1609]
- E Awl of copper, Auvernier [2780]
- F Part of ripple-flaked blade of light brown Grand Pressigny flint, Auvernier [2227]
- G Arrowhead of brownish-black flint, Auvernier [2299]
- H Core drilled from perforation of stone axe-hammer, Auvernier [2730]
- J Knife of copper, Bevaix [3021]

Stone Cists

by O. G. S. CRAWFORD

CISTS are often met with on the open moors of Britain, and a brief account of them may therefore be of interest.

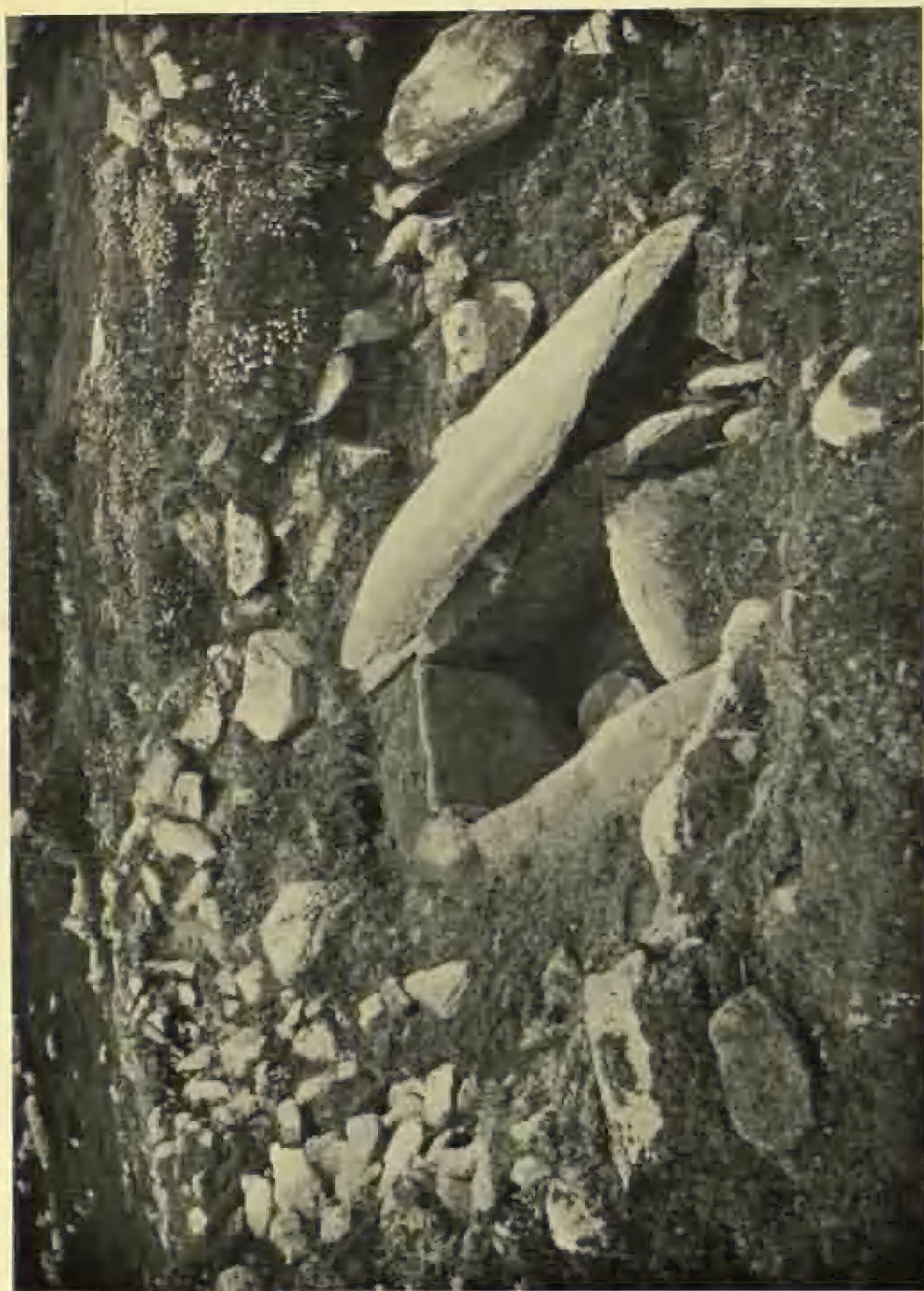
First, a few words about terminology. Our predecessors used also the words 'Kist' and 'Kist-vaen', and indeed the latter word still survives in some of our remoter western districts. 'Kist-vaen' is however an impossible word; it was invented by antiquaries to whom all prehistoric monuments were 'Celtic', requiring therefore a Celtic name. Since the original name was unknown, new ones had to be invented. In the days when the words of Authority were heard with undue respect and awkward questions were seldom put, those spurious terms obtained wide currency. The word 'cist' has long been used by Scottish archaeologists, and it is the one adopted by the British Ordnance Survey.

A cist is a small box consisting of four stones set in the ground at right-angles to each other and generally covered by a fifth. The dimensions vary, but the cist averages 2 feet in internal width by 4 feet in length and 2 feet in depth. It may originally have been either placed in a hole dug for it, or set up on the surface of the ground. In the latter case a protecting cairn or earthen mound was generally piled upon it, and the whole surrounded by a circular row of close-set largish stones. The result is then a typical cairn-circle.

A burial-chamber, on the other hand, consists of large—sometimes very large—stones; or the sides may be formed by a dry wall of small stones. The roof was either a large capstone, or a corbelled vault of small stones, or a combination of both. The most obvious difference is that of size; roughly speaking a burial-chamber is a room into which one can penetrate, whereas a cist is a mere box. Burial-chambers were formerly called 'dolmens' and 'cromlechs', and even the word 'Kist-vaen' was sometimes improperly applied to them.

Cists were probably introduced into Great Britain by the Beaker-folk about 1800 B.C. In Great Britain, at any rate, they are not

PLATE 1



CIST ON SAMSON, SCILLY ISLES, EXCAVATED 1964
J.W. Gillman & Sons, Ltd. Mary's

PLATE II



CIST ON SEA SHORE, ST. MARTIN'S, SCILLY ISLES.
Ph. Gibson & Sons, St. Mary's.

STONE CISTS

'degenerate' burial-chambers. They were used for over 2000 years, and examples have been found containing objects of the Iron Age.*

It is probable that in certain regions they were the normal receptacles for the dead down to the introduction of Christianity, when cremation went out of use. They were not originally, however, designed for cremated interments. The cists of the earliest well-dated group (in eastern Scotland) contain the skeletons of Beaker-men.

The examples which we illustrate here are all typical in a general way but peculiar in small points. They seem likely therefore to serve excellently for the present purpose, since the specialist, to whom the type is well-known, will be interested in the abnormal features. Plate 1 shows a cist in a barrow on the northern hill of Samson, one of the Scilly Isles, now uninhabited. It was opened on 3 September 1862, under the direction of the owner, Mr Augustus Smith, M.P., for the benefit of a 'select party of Cambrian archaeologists'. When the capstone had been levered off, in the cavity beneath was found a deposit of burnt bones and nothing else. One remarkable feature of the cist consists in the grooves which have been cut in each of the larger side-stones, to allow the end-stones to be fitted more securely. So far as I know this feature is unique. The stone is granite and must have been hard to work with primitive appliances. 'The bottom of the sarcophagus [cist] was neatly fitted with a pavement of three flat but irregular-shaped stones, the joints fitted with clay mortar, as were also the interstices where the upright slabs joined together; as also of the lid [the capstone], which was very neatly and closely fitted down with this same plaster'. The cist is 3 feet 9 inches long by 2 feet wide (internal dimensions), and 2 feet 3 inches deep; the capstone is 4 feet by 5 feet 7 inches. An account of the opening is published in the 45th annual report of the Royal Institution of Cornwall (1863), pp. 50-53, but the measurements given there are wrong. A long quotation from Mr Smith's paper will be found in *Naenia Cornubiae*, by W. C. Borlase (1872), pp. 159-62. The presence of clay mortar is interesting; I observed fragments of similar mortar, mixed with grit, in a chambered barrow on Normandy Down, St. Mary's, and it has remained in use on the islands almost to the present day.

The other two cists in the Scilly Isles illustrated here are peculiar

* Two Scottish cists belong to the Early Iron Age, one on Kippit Hill, Dolphinton (Lanarkshire), and the other at Moredun, near Gilmerton (Edinburgh). See *Proc. Soc. Ant. Scot.*, xxxviii, 427 and lv, 45.

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in their present situation only—one is on the sea-shore and the other in the middle of a road. Both were discovered by Mr Alexander Gibson, whose excellent photographs are reproduced. The cist on the shore (plate II) is on St. Martin's, between Crethus Hill and English Island Point, about 20 yards from the edge of the rushy bank, and at approximately high-water-mark. It is oriented north and south and is 3 feet long by 2 wide. It has now no capstone. The cist when found was full of coarse, gravelly sand and stones, which were cleared out; amongst this were parts of leg-bones (the joint-ends missing) and smaller fragments; then a piece of a human jaw, without teeth, and finally the skull. The facial portion was missing. The skull fell to pieces on removal but it and all the other pieces were preserved and the cist filled in again. Near by, to the west, were two or three other cists of the same type, and many years ago yet others were observed, both round this bay and at Lawrence's, to the west of Crethus Hill.

The cist in the road (plate III) is in Town Lane, about midway between Holy Vale and the Marconi Station, St. Mary's (lat. $49^{\circ} 55' 35.2$ N, long. $6^{\circ} 17' 52.5$ W). Nothing is known about it, but presumably it was found when the road was made by Mr Augustus Smith more than 80 years ago. It measures about 3 feet in length by 2 feet in width, and is oriented approximately NE-SW. There is said to have been another near it, but Mr Gibson has searched without success.

The earlier cists are generally found beneath barrows. Some at any rate of the later examples occur in groups, apparently uncovered by mounds. Such for example was the cemetery at Harlyn Bay, near Padstow in Cornwall. (Plates IV and V). The date of these graves is fixed by their contents and it is plainly not earlier than the Iron Age. The excavation was carried out at intervals over a long period and no proper account has ever been published; nor does any record appear to have been kept of the contents of each grave. The whole area was buried under sand-dunes, as may be seen from photographs taken at the time of excavation by Mr Gibson. The cists are formed of the local slates and contained skeletons and some iron, together with at least one bronze brooch of the late La Tène period. The objects are exhibited in a private museum on the spot. When in the neighbourhood in 1917 I made some notes and attempted to summarize the scanty records of discoveries in the immediate vicinity; these were published in the *Antiquaries Journal* (1921) 1, 293-99. Other cemeteries of the same kind probably exist elsewhere on the north coast of

PLATE III



CIST IN TOWN LANE, ST. MARY'S, BILLY ISLES
(W. Gilman & Son, St. Mary's)

PLATE IV



IRON AGE CELT AT HARLYN BAY, CORNWALL.
PA. Gibson & Son, St. Mary's

PLATE V



IRON AGE CIST AT HARLYN BAY, CORNWALL
Ph. Gibson & Sons, St. Mary's

PLATE VI



CIST WITH WORKED CAPSTONE, CONTAINING BEAKER AND SKELETON,
WEST WHARMLEY, NORTHUMBERLAND, 1938

PH. JOHN GILSON, F.S.A.

STONE CISTS

Cornwall. Cist-cemeteries of precisely similar character are still used in the Aures mountains of Algeria, each grave having its votive pot or potsherd cast upon it.

These West Country cists are plainly quite different from, and later than, the numerous burial-chambers which occur there, such as those on Normandy Down and Porth Hellick Down, St. Mary's. The burial-chambers, or passage-graves, though for the most part not very large, are much bigger and belong to quite a different type. Though of earlier date they belong to the Bronze, not to the Stone Age. They are probably therefore later in absolute date than the Long Barrows of the Cotswolds and Wessex. They were always covered, wholly or in part, by a mound of earth and stones, itself surrounded by a circular retaining-wall of boulders or standing stones. Similar mounds occur in Cornwall, frequently enclosing structures which, if free-standing, would be classed as typical 'dolmens'.

Two instances may be cited of cists in the North of Britain, both recent discoveries. One, at West Wharmley, near Hexham (plate VI), contained a beaker. It was discovered in ploughing on 3 March 1928, owing to the capstone striking the plough. The cist was cleared out by the men, but Mr Hedley was able to retrieve some of the contents. The internal dimensions were:—length, 2 feet 3 inches; breadth, 1 foot 9 inches; depth, 2 feet. The capstone weighs more than a ton, and is 5 feet long by 3 feet 3 inches wide by 1 foot thick. It is peculiar in having its ends 'dressed into a roughly circular shape. This has been done, not by percussion, but by wedging off segments with a round pointed implement. The wedge-holes are so small in diameter, and of such a depth, that it is difficult to believe the work can have been done by an instrument of bronze, having regard to the very great thickness and density of the stone, and the evident smallness of the tool-point used'. The beaker was mended and is compared with that from Roseborough (Greenwell, *British Barrows*, no. 197). The above account is taken from Mr Hedley's, published in *Proc. Soc. Ant. Newcastle-on-Tyne* (1928), ser. 4, III, 187-9. The photograph of the cist is published there, together with one of the beaker, and we are indebted to Mr Hedley and to Mr Gibson for permission to reproduce it again from the same photograph.

The last example we shall quote is a cist, found February 1926, at Pickie Farm, near Boarhills, Fife. It was discovered in the same way as the previous one, during ploughing; but by good fortune the ploughman did not clear it out. This was done by Dr David Waterston,

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of St. Andrews University. The cist was 4 feet long by about 2 feet wide and 1 foot 10 inches deep, and oriented east and west. It was covered by a roughly trimmed rectangular capstone. No pottery was found; but the skeleton was well preserved, and was that of a man of the Beaker-type. A full account is given by Dr Waterston in *Proc. Soc. Ant. Scot.* (1927) LXI, 30-44. With it was a single white quartz pebble (see ANTIQUITY, II, 358).

This cist is typical of the many which have been found in eastern Scotland. For further information see Rice Holmes,¹ and the references there given.²

Similar or analogous cists are abundant in Wales, on Dartmoor, and indeed in almost every stone-producing region of Britain that was inhabited in prehistoric times. Examples have been recorded from the Cotswolds,³ from the Marlborough Downs,⁴ from the Isle of Wight,⁵ and from Kent.⁶

Both in time and space their distribution is extensive; and cist-burial was evidently the commonest method employed in Britain through prehistoric times, when suitable materials were available.

¹ *Ancient Britain*, Oxford, 1907, p. 428.

² To these may be added the illustrated *Catalogue of specimens from prehistoric interments found in the N.E. of Scotland, and preserved in the Anthropological Museum, Marischal College, Aberdeen*, by R. W. Reid, M.D., 1924; *Proc. Soc. Ant. Scot.*, XXXIX, 418; and Mr Callander's numerous notes on cists in *Proc. Soc. Ant. Scot.* XI, 23; XII, 116; XLII, 212 (urn in cist); XLIII, 78 (five cists); XLVIII, 194; L, 150; LI, 15; LV, 45 (Iron Age cist); LVI, 32; LVII, 299; LVIII, 286.

³ Crawford, *Long Barrows of the Cotswolds*, 1925, pp. 18, 19.

⁴ *Proc. Arch. Inst. Salisbury* (1849, published 1851), p. 107.

⁵ *Proc. Soc. Ant. Lond.* ser. 2, XXV, 191.

⁶ *Proc. Soc. Ant. Lond.* ser. 2, XVII, 376-7; 6th O.S. map, Kent, 31 SW.

Massilia and Early Celtic Culture

by J. M. DE NAVARRO

HALLSTATT and La Tène are the names given to the first and second phases of the pre-Roman Iron Age. They are derived from the sites where objects characteristic of the respective cultures were first identified, neither Hallstatt nor La Tène having any claim to be considered as the cradles of the cultures named after them. The former lies in Upper Austria. La Tène ('the shallows') is situated in Switzerland at the eastern end of the lake of Neuchâtel.

The upper limit for the chronology of the Hallstatt Period is a vexed point. If by Hallstatt we mean a period when iron was in general use, it can hardly have said to have begun before the ninth century B.C.; if we regard it as denoting the time when Villanovan¹ and other contemporary influences first made themselves felt in Central Europe, it can hardly have begun later than c. 1000 B.C. Reinecke would even put it back as far as c. 1200 B.C. The lower limit is somewhat easier to define. Generally speaking it came to an end c. 550–500 B.C.; but in some districts it persisted until c. 400, while in north-east Germany and other remote areas, the La Tène culture cannot be said to have succeeded it until c. 150 B.C., or even later.

Reinecke divides the Hallstatt period into four phases; Déchelette into two.² It is with Reinecke D, which roughly corresponds to Déchelette II, that we are concerned. The dates assigned to this phase are given as follows:—

Reinecke, c. 700–550 B.C. and in some districts later; Déchelette, c. 700–500 B.C.

The art of the Hallstatt Period, for the most part rigidly geometric, is largely the outcome of Bronze Age sources, though a tendency towards figural ornamentation, derived from Italy, also asserts itself. But if one may generalize, the Hallstatt style is mainly an exaggerated

¹ For account of Villanova period see D. Randall-MacIver in *ANTIQUITY* (1928) II, pp. 134–140.

² For Reinecke, see his articles on the four Hallstatt phases in Lindenschmidt's *Altötomer unserer heidnischen Vorzeit* (=AuhV) V, pp. 144, 231, 235, 315 and 399; For Déchelette see his *Manuel*, II, 2, p. 622 f.

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development of older influences. Not until it was in its last phase did the Hallstatt world really come into contact with Greece.

The La Tène culture first came into being c. 550 to 500 B.C.; in Switzerland, and in the south-westernmost parts of southern Germany not until c. 400. Paul Reinecke who, more than any other authority, has contributed to our knowledge of this period, divides it into four phases A-D,³ A and B corresponding to Déchelette I; C and D to Déchelette II and III. The importance of this twofold division of La Tène I has not yet been fully grasped by English and French archaeologists: with the possible exception of the bronze bowl from Cerrig-y-Drudion (*Ant. Jour.* (1926) VI, p. 277), phase A is unrepresented in these islands; not so in France. Without recognizing this subdivision of La Tène I, it is hardly possible to obtain a clear idea of the genesis of the La Tène culture. The phase which most concerns us is phase A. This, according to Reinecke, began c. 550 and ended c. 425 or 420 B.C.⁴

The genesis of the La Tène style was due to a fusion of older elements, with more or less contemporary Greek influences. The former were technical as well as stylistic; the latter, chiefly stylistic. The plant-motifs, which, with their geometrical derivatives, are the most characteristic feature of La Tène art, are mainly derived from classical prototypes—the palmette, free-tendril and other patterns. The zoomorphic and anthropomorphic elements mostly date from phase A.

The zone in which the culture of La Tène A held dominion extends roughly from eastern France to Bohemia. For convenience, it may be divided into a Central, a Western and an Eastern area. The first consists of the Middle Rhenish and adjacent regions, and is best represented by the famous group of burials known as the 'Chieftains' Graves', with their rich tomb-furniture of gold and bronze ornaments, their weapons and imported bronze vessels of Greek or Graeco-Italian manufacture. The Western area lies in east and north-east France. The rich chariot-burials of the Marne region mostly date from phase A. Here Greek or Graeco-Italian bronze vessels occur, though not in

³ See his important study *Zur Kenntnis der La Tène-Denkmäler, der Zone nordwärts der Alpen*, in the 1902 *Festschrift des Römisch-Germanisches Central-Museum zu Mainz* (=Mainzer Festschr. 1902).

⁴ *Bayerischer Vorgeschichtsfreund* (1925) v, p. 49 f. Schumacher's dates for this phase are:—from the end of the sixth century to c. 400 B.C.; see Ebert's *Reallexikon*, viii s.v. Mittel-und Süddeutschland, p. 266 f. Déchelette assigns the fifth and fourth centuries to his La Tène I, see his *Manuel*, II, 3, p. 930 f.

MASSILIA AND EARLY CELTIC CULTURE

such profusion as in the Rhenish Chieftains' Graves. Greek pottery has come to light on several sites in the Western and Central areas.⁵ The Eastern area (east Bavaria, west Bohemia and southern Thuringia) in certain respects differs fundamentally from the other two. Reinecke observed these differences over a quarter of a century ago,⁶ and considered that they were due to our Central and Western areas being subject to Greek influence which came by way of the Hellenic colonies in southern France, while the Eastern area (where the Greek influence is far less strongly felt) derived its southern inspiration mainly from Italy, by way of the Adige-Brenner route. Since then Déchelette and others have challenged the view that the Greek influence from southern France reached the La Tène zone prior to c. 300 B.C. And although little has been written on this subject in recent years, these criticisms have won increasing support.

With the downfall of its great Bronze Age civilization, the east Mediterranean area ceased to have any great influence on the cultures of Central Europe, but after an interval of approximately five centuries, during the last phase of the Hallstatt Period, the influence from Greece (I use the word in its widest sense, including the whole area of Hellenic colonization) made itself felt once more. It can best be traced in a small group of imported metal objects and pottery, found in France, Switzerland and south-west Germany, associated with antiquities dating from phase D of the Hallstatt culture (Déchelette's Hallstatt II). A short summary of these imports is necessary before attempting to determine the direction by which that Greek influence reached Central Europe.

A. METAL OBJECTS. (Finds marked with an asterisk denote tumuli with chariot-burials).

1. *Bronze vases.* Bronze tripod and bowl ornamented with bronze griffons' heads :⁷ La Garenne, near Chatillon, Cote d'Or* (Déchelette, *l.c.*, II, 2, p. 647).

⁵ For convenience sake I shall allude to the above Western and Central areas as the Celtic Zone, for there is good reason to believe that during the latter part of Hallstatt D they formed part of the area occupied by the Celtic peoples (see my 'Coming of the Celts' in the *Cambridge Ancient History*, VII, p. 54ff.—CAH, VII.) Whether the above Eastern area was already settled by Celtic peoples or not is still a matter of dispute.

⁶ *Mainzer Festschr.*, 1902, p. 56 f.

⁷ These and the griffon's head from Sens were undoubtedly of Greek manufacture (cf. Déchelette, *l.c.*, II, 2 figs. 221 and 223). If these heads are of Ionian workmanship, they doubtless reached the Celtic area by way of Massilia: Massilia was a Phocaean colony and Phocaea was one of the principal cities of Ionia. See Reinecke, *AuhV*, v, p. 329. Compare also Herodotus, IV, 152.

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A bronze 'hydria': Grächwyl, Canton Berne,* see plate I.
(Tschumi, *Urgesch. des Schweiz*, p. 116).

The early wine flagons on pedestals, with trilobe mouth and bulging body, see fig. 1: Kappel (Baden)*—handle and pedestal only (Wagner, *Fundstätten und Funde*, I, p. 211). Vilsingen, Hohenzollern*—also in fragments, see plate II. (*Zeitschr. für Ethnologie*, 1900, p. (482)). L'Agnel near Pertuis, Vaucluse (*L'Homme Préhistorique*, 1909, p. 204, cf. Déchelette, *l.c.*, II, 2, fig. 308.3).

A griffon's head similar to those from La Garenne was found at Sens, Yonne (Déchelette, *l.c.*, II, 3, p. 1598).

The bronze bowls with beaded rims, found at Hundersingen,* Portalban, etc (see Reinecke, *AuhV.* v, p. 328, f. no. 1033), though originally Greek types, may have been copied elsewhere.

The same may apply to the large bronze cauldrons with iron ring handles discovered at Hundersingen* and Klein Aspergle, Württemberg, etc. (*Ibid.* p. 329, no. 1034).

2. *Weapons.* Greek javelin heads of an early type were found on the following sites:—Pourrières, near Marseilles, Camp du Rouret, Alpes Maritimes and in a Late Hallstatt tumulus at Alaise, Doubs (see Clerc, *Massalia*, I, p. 258).

M. Clerc tells me that a Greek helmet of the sixth century has recently been found in Vaucluse. A Greek greave was found at Roquefort, Alpes Maritimes (Clerc, *l.c.*, I, p. 259 f.).

B. *POTTERY.* Greek pottery has been found on a number of sites in southern France (see Clerc, *l.c.*, I, p. 340 ff.); among other finds, a Protocorinthian cup was unearthed in a Late Hallstatt tumulus near Pertuis, Vaucluse (see Déchelette, *l.c.*, II, 2, fig. 252), and a *lecythos* with black palmettes at Voiron, Isère (*Bull. de Corresp. Hellenique*, 1884, p. 193).

The finds from the Camp de Château-sur-Salins (Jura) are of greater importance. The Camp de Château is a fortress dating from the end of the Hallstatt and the earliest La Tène period, a stratified site carefully excavated by M. Piroutet.* Fragments of red- and black-figured Attic vases and of unpainted Greek *amphorae* were found with Late Hallstatt fibulae and other antiquities. The Camp de Château, though perhaps the most important, is not the only site in that region

* *Revue Archéologique* (=RA) 1909, I, pp. 193 ff.

PLATE I



THE 'HYDRIA' FROM GRÄCHWYL (CANTON OF BERNE)
By courtesy of the Bernisches Historisches Museum, Authorities

PLATE II



THE PYLON FROM VILSINGEN (HOHENZOLLERN)
By courtesy of the Friedrich-Hörsing-Museum, Stuttgart

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which yielded Greek pottery. Three Greek *amphorae* were found in another Jura camp, Mont-Guérin; several in the tumuli at Mantoche (Hte. Saône) and one in a barrow at Mercey-sur-Saône (Hte. Saône).⁹ The last two sites Déchelette assigns to his first La Tène Period. The above group of antiquities are nearly all found in Hallstatt contexts and date from the seventh and sixth centuries.

During La Tène A, this Greek (or ultimately Greek) influence attained to a still greater importance. There is a whole series of imported bronze objects in the Celtic area, *stamnoi* (see plate III), wine flagons no longer with round pedestals and trilobe mouths, but with flat bases and beaked spouts (hence the German name *Schnabelkanne*—fig. 2), and other types. Further to the east, their occurrence is more sporadic. A full inventory with a map (the geographical positions of some of the sites on the latter are inaccurate) is given in the last of the four volumes of Déchelette's *Manuel* (p. 1599 ff.).¹⁰ It is yet to be seen how far these vessels are of Greek or Graeco-Italian (Greek colonies in Italy) workmanship, and how far they are Etruscan or wholly barbaric copies; the last-named are easier to distinguish (*e.g.* the beaked flagon from Klein Aspergle). But the influence of the late archaic and classical Greek styles upon more or less contemporary Celtic art is very strong, whether more directly transmitted through Massilia by way of the Rhône, or less directly through barbaric, Etruscan or Italian copies. This is particularly noticeable during phase A of the La Tène Period. Yet side by side with fairly faithful imitations of Greek ornamental motifs, we already begin to meet with a conscious stylizing of the classical prototypes. In the ensuing phases, this process grew so marked that it is often difficult to recognize the classical parentage of many of the Celtic designs. This, no doubt, is partially due to the very noticeable decrease in the number of classical imports found in the trans-Alpine regions during La Tène B.¹¹

Having given a brief sketch of these Late Hallstatt and Earliest La Tène imports, let us try to retrace the routes along which they passed, beginning with the Hallstatt group.

Leaving aside the Adige-Brenner-Elbe highway which, even at the time we are speaking of, had linked up Italy with Jutland for at

⁹ *L'Anthropologie* (1918-19) xxix, p. 222; Déchelette, *l.c.*, II, 3, p. 1047 f.

¹⁰ The French material for the map in this article is partly based on the above, and partly on Joulin (*ib.*, 1910, II, p. 1 ff.) and Clerc's *Massalia*, 1).

¹¹ Greek coins first appear in the Celtic area during this phase, and payment by coin may have somewhat affected the more primitive method of trade by barter.

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least a thousand years,¹² and along which the Italian stimulus reached the Eastern La Tène A area, two main routes are open to discussion: the Ticino-Mesocco-Bernardino-Rhine and the route which passed up the Rhône from southern France. The Simplon and St. Gotthard passes, partially owing to the bad Sub-atlantic climate conditions (see below p. 442), were of no importance at this period; and although the route over the Great St. Bernard was in existence the evidence does not warrant our regarding it as one of the main cultural highways between Italy and the barbaric North.¹³

It has been argued that the '*hydria*' reached the Berne area from Italy by way of the Ticino-Rhine route. But, from a purely geographical point of view, the latter would be a devious way for a Greek import made in south Italy to reach that district. It should also be noted that this '*hydria*' belongs to a cycle of forms unknown to Upper Italy. The most northerly objects which show any stylistic resemblance to the Grächwyl '*hydria*' are the bronze handles cited by Neugebauer from the Marche region.¹⁴ The '*hydria*' is considered by Neugebauer as having been made under Peloponnesian (probably Laconian) influence in one of the Greek workshops of southern Italy.¹⁵

Turning to the pottery, we have as yet only one connecting link between Provence and Lyons—the *lecythos* decorated with black palmettes from Voiron. But north of that zone finds of this nature are better represented. We have already alluded to the Greek *amphorae* found at Mantoche, Mercey, Mont Guérin and the Camp de Château. Furtwängler pronounced the *amphora* from Mercey and one of those discovered at Mantoche to be of pure Greek manufacture, and, in assigning them to the sixth and fifth centuries, noted that they corresponded in form to representations of *amphorae* on red-figured vases of the severe style.¹⁶ The finds from the Camp de Château furnish evidence of a yet stronger nature. At a slightly lower level than the

¹² See *Geograph. Journal* (1925) LXVI, pp. 484 ff.

¹³ Although coin-finds show that an overland-trade existed between Massilia and Upper Italy in the fourth century, there is little evidence for close relations between those regions over the West Alpine passes during the Hallstatt D and La Tène A phases.

¹⁴ *Römische Mitteilungen* (1920) XXXV, p. 403 f. (cf. Randall-MacIver, *Iron Age in Italy*, pl. 30 and p. 134).

¹⁵ *Archaeolog. Anzeiger*, 1925, cols. 183-8 and 204.

¹⁶ *RA.* (1909), I, p. 209. One of the fragments from Mont Guérin was of a ware identical with the *amphora* from Mercey.

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stratum which yielded black-figured Attic ware (vith century) sherds were found of wheel-made pottery decorated with undulated lines, and indigenous to Lower Provence.¹⁷ Examples of this 'Ligurian' pottery were discovered at Château de Mormorot (Jura), and at Court St. Etienne (near Dinant in Belgium) in a late Hallstatt burial.

From the above it is clear, as Piroutet has already observed,¹⁸ that trade relations were in existence during the sixth century between the Greek colonists in southern France and the Celtic population of the Saône-Seille-Doubs area, relations in which the Ligurians probably acted as middle-men. But did this trade effect southern Germany?

Although that area might appear to have been supplied by the Bernardino-Rhine route, the distribution of the earlier wine-flagons (Pertuis, Kappel, Vilsingen) and the bronze javelin-heads (Camp du Rouret, Pourrières, Alaise) points to the Greek influence having reached south Germany from southern France. Neither of these types has come to light in Upper Italy. From a geographical standpoint there is nothing to prevent the route which linked up the Franche Comté and southern Germany from proceeding along the Doubs to the Montbéliard region and on through the gap of Belfort to the Rhine.¹⁹ In this connexion it should be noted that close cultural relations existed during the Hallstatt period between Württemberg and the Alaise district;²⁰ and Alaise, with its thousands of Hallstatt tumuli, lies in the department of Doubs, at no great distance from Salins, overlooking which stands the Camp de Château, the stratified site which yielded the important finds of Greek pottery and the 'Ligurian' sherds.

Further to the west, the evidence is less striking, but we have the bronze griffon's head from Sens. The distribution of sixth century and later southern imports in south-west France, points to a route along the Garonne (see below pp. 433, 437). Some of the imports referred to above (on p. 425 f) were actually made in the seventh century. The earliest Greek pottery found at Fort St. Jean (on the north side of the old harbour of Massilia) dates from the latter half of the seventh century and

¹⁷ This type of pottery was unearthed at Fort St. Jean (Marseilles) in association with Greek and Italian sherds dating from the seventh to the fifth century B.C.

¹⁸ *L'Anthropologie* (1918-19) XXIX, p. 215 ff.

¹⁹ In the fifth century the Greek influence appeared to have reached the Rhine by another route: see below, p. 437 f.

²⁰ See M. Piroutet's *Contribution zur l'étude des Celtes*, in *L'Anthropologie* (1918-19) XXIX and (1920) XXX, especially what he has to say concerning the Alaise-Württemberg group.

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shows the Greeks had established contact with that region during the half century preceding the traditional date of the colony's foundation.²¹ It is not impossible, therefore, that the earliest imports reached the Celtic and adjacent areas between the years 650-600 B.C.

Judging from the increase in the number of southern imported objects found in the Celtic area during La Tène A (beaked flagons, *stamnoi*, etc.), the relations between those regions and Massilia would seem to have become greatly intensified. But a detailed study of these imports has yet to be made; and it is not unlikely that some of them were of Etruscan, some of wholly barbaric manufacture. Never the less, there is good reason to believe that the relations between the Celtic area and the south of France continued uninterrupted during the earliest phase of the La Tène period. The closing of the Straits of Gibraltar towards the end of the sixth century, to other than Carthaginian traders, though not responsible for the opening of an overland route from Massilia, no doubt gave an added stimulus to its commerce with the barbaric region to the north.

With regard to coin-finds, Cary²² considers the distribution of Greek coins in the barbaric area as a 'crucial test' for the existence of a trade between the Greek colonies of southern France and the barbaric *hinterland*. The earliest types (prior to 450 B.C.) found in the Provence area (the treasures of Auriol, etc.) fall into two categories: those minted in the east Mediterranean area or southern Italy, and those in the barbaric style. Neither group is of much concern to us: whether we agree with Babelon in regarding the latter as struck by the west Mediterranean colonists, or, with Seltman, as actually imitated by their barbaric neighbours, neither they nor the imported types are found far enough north to be in the Celtic area. The same is true for the early Massiliote coinage (struck before 400 B.C.).²³ Cary, in noting this, dismisses the view that the Massiliotes dispensed with currency when trading with the Gauls, because the latter 'showed a marked avidity for coins and set up mints at an early date'. But, at the highest estimate, the first Celtic imitations of Greek coins date shortly before

²¹ *Comptes Rendus de l'Académie des Inscriptions et de Belles-Lettres* (=CRAI) 1910, p. 422 ff. and Clerc, *l.c.*, I, p. 105. Ionian ware of the sixth century has been found on this site, at Baou-Roux, and at Vitrolles, near the Étang du Berre (Clerc, *l.c.*, I, p. 341).

²² *Journal of Hellenic Studies* (1924) XLIV, p. 166 ff.

²³ Between 400 and 350 B.C. two new Massiliote types were struck. These have been found in northern and central Gaul. But as they were current for several centuries, they form an unsafe basis of argument (see Cary, *l.c.*, p. 175.) Cf. CRAI VII, p. 49.

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336 B.C., while minting can hardly have become common among the Celts prior to 300 B.C. Yet the finds from the Camp de Château show that a trade in Greek imports between eastern France and Lower Provence had been established during the sixth century. The above argument of Cary is therefore unsound; and it would be safer to ascribe the absence in Celtic lands of Greek coins earlier than the fourth century



FIG. 1. EARLIER TYPE OF FLAGON. VILSINGEN (RECONSTRUCTED. SEE PLATE III)*

to the fact that the Celts (not as yet in *immediate* contact with the Greek colonies) were not ripe for trading in currency, and still had recourse to the more primitive method of barter. The evidence of early coin-finds does not therefore affect the issue one way or the other.

We have already noted that red-figured Attic sherds were discovered in the top stratum (E) at the Camp de Château (Jura).

Greek pottery has also been found in the following Celtic burials: Somme Bionne (Marne), La Motte St. Valentin (Hte. Marne), Rodenbach (Rhenish Palatinate) and Klein Aspergle (Württemberg).²⁴

Since Déchelette published his monumental work, an important

²⁴ The references will be found in the last of the 4 vols. of Déchelette's *Manuel*. The latest of these vases dates from c. 450 B.C.

* I have to thank Mrs M. C. Burkitt for this drawing.

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site has been discovered at Ensérune (Hérault),²⁵ about six miles south-west of Béziers. Here the learned and public-spirited M. Mouret has excavated upwards of a hundred and thirty-eight incineration graves. Among the more important metal objects are : swords of a La Tène I character, and of a curved Iberian type ; La Tène I fibulae ; girdle-clasps derived from the palmette and zoomorphic motifs, both varieties found in La Tène A contexts in the Celtic area. Coral is by no means poorly represented. The pottery, which is of exceptional interest, may be roughly divided into four categories : (1) red-figured Attic vases of the late fifth and fourth centuries, (2) 'Campanian' pottery of the fourth and third centuries, (3) Iberian pottery of the same date, (4) vessels of indigenous manufacture. With regard to the red-figured Attic vases, it should be noted that this was not the earliest type of Greek pottery to reach south-west France : examples of black-figured Attic ware have been found at St. Gabriel (near Tarascon), Béziers, Montlaurès and Clermont-Dessous (Lot et Garonne).²⁶ Although Mouret is probably correct in regarding Ensérune as an Iberian settlement,²⁷ he rather under-estimates the possibility of Celtic influence. The La Tène I swords and a gold earring (like Déchelette, *l.c.*, II, 3, fig. 542.2) assuredly point to relations between Ensérune and the Celtic world. I have spoken of Ensérune at some length. Owing to the finds from this site, it has been suggested that the cradle of the La Tène culture might lie further to the south-west than is generally supposed.²⁸ Until earlier burials have been discovered, one should beware, when speaking of the genesis of the La Tène culture, of over-emphasizing the importance of Ensérune: the majority of the graves date from the fourth and third centuries, the most ancient from the end of the fifth, whereas the Middle Rhenish 'Chieftains' Graves' and the rich chariot-burials of the Marne culture date from the fifth, Reinecke even placing the earliest of them in the second half of the sixth century.²⁹

²⁵ CRAI, 1916, pp. 397 and 469 ; 1918, p. 95 ; 1919, pp. 223 and 293 ; 1920, p. 31 ; 1927, p. 1. Fondation Piot : *Monuments et Mémoires* (1924) xxvii, p. 45 ; *L'Illustration*, 24 April, 1926 ; *Corpus Vasorum antiquorum*, fasc. 6 (1927).

²⁶ Clerc, *l.c.*, I, pp. 342, 346, 348 ; Déchelette, *l.c.*, II, 3, p. 1598.

²⁷ Apart from the Iberian pottery and certain of the metal objects, Iberian inscriptions occur on some of the cinerary urns.

²⁸ CRAI, 1918, p. 96 f.

²⁹ This should be borne in mind when speaking of the place of origin of the above zoomorphic girdle-clasps. Mouret does not seem to realize this : cf. *Mon. et Mem. Piot*, xxvii, p. 52.

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Another site in this district, where Greek influence is to be seen, is Montlaurès, about 2½ miles west of Narbonne.³⁰ Here the foundations of the huts, cut into the rock, closely resemble a type of foundation discovered at Athens (see Déchelette, *l.c.*, II, 2, fig. 422). The earliest Greek pottery found here (black-figured ware) dates from the sixth century; but the majority of the sherds of Greek and Italo-Greek vases from the latter part of the fifth, to the third century.

Further to the east, in the Lower Rhône area, important finds came to light on the hill-fort of Baou-Roux, (near Marseilles). The earliest sherds found on this site belong to the Italian geometric cycle of pottery; but fragments of painted Ionian ware, black- and red-figured Attic vases, and later Cumæan pottery, were also discovered, not to mention other objects.³¹

Apart from Baou-Roux, the following sites in or near the Lower Rhône valley have yielded red-figured Attic ware:—Courtines and Petit Cerveau (both near Ollioules), Caumont, St. Jacques (close to Cavaillon) and Nîmes. Further up the Rhone, Greek *amphorae*, or *amphorae* made in Greek colonies in southern Italy, occurred on three sites to the north of Uzès:—Chusclan, Bagnols-sur-Cèze and Laudun.³² North of these, I know of no Greek pottery of this period until we come to the Celtic area.

Classical writers speak of the Celtic peoples' great love of wine, and the evidence of archaeology not only bears out what they have to say on this point, but shows that there is a long history behind these references. Most of the imported vessels, whether pottery or bronze, were ultimately connected with the carrying, storing, mixing and drinking of wine. If, as in the case of the La Motte St. Valentin *stamnos*, they were used for cinerary urns, it does not mean that they were imported for that purpose, nor does it follow that they were all imported solely as *objets d'art*. In the 'Chieftains' Graves', we sometimes find a regular table service of bronze vessels; while the fragments of undecorated *amphorae* from other than sepulchral sites (Camp de Château and Mont Guérin) prove that the vessels can hardly have been imported as anything else than receptacles for the produce of the South.³³ But

³⁰ CRAI, 1909, p. 981.

³¹ *Annales de la Faculté des Sciences de Marseille*, XIII, fasc. 3, p. 84 ff.

³² Clerc, *l.c.*, I, pp. 340-5, and Joulin, *RA* (1910), II, p. 7 f.

³³ Even supposing that some of these *amphorae* were used for the transportation of oil and not wine, we know that olive oil was one of Massilia's staple exports (see Clerc, *l.c.*, I, p. 279 f.)

PLATE III



THE 'STAMNOS' FROM KLEIN ASPERGLE (WÜRTTEMBERG)
By courtesy of the Landeskunstsammlungen, Stuttgart

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is this true for such works of art as some of the bronze vessels or the decorated Greek pottery? In the 'Chieftains' Grave' at Weisskirchen (Rhein-provinz) the bronze *stamnos* was found to contain a resinous substance.³⁴ This, on chemical analysis, proved to be white pitch.³⁵ We know from classical sources that the ancients sometimes pitched their wines. Pliny (Hist. nat. xiv, 24) tells us that the Greeks, to give briskness to their wines when too flat, mixed them with potters' earth, pounded marble, salt or sea-water, the Italians with *brown* pitch, and that it was 'the universal practice both there (in Italy) and in the neighbouring provinces to season their wine with resin'. But later in the same work (xiv, 25), still speaking of wine, he tells us that the best quality of pitch is that from Mount Ida, though Vergil (Georgic II, 498) speaks of Narycian pitch. The latter reference is of interest. Narycia is the poetical name for the Greek colony Locri in southern Italy, and it has lately been suggested that many of the archaic Greek bronze vessels may have been made at Locri rather than, as hitherto supposed, at Tarentum.³⁶ Locri was in Bruttium, a region according to Pliny (*l.c.*, xiv, 25) that produced the most highly esteemed pitch in Italy in preparing vessels for the storing of wine.

The contents of the Weisskirchen *stamnos* not only shows that this practice dates back to the fifth and possibly even into the sixth century, but that those vessels were used by the Celts for wine, and seem, originally, to have owed their introduction into the Celtic area to the wine trade, which, as the *amphorae* from the Camp de Château and other sites show, probably started in phase D of the Hallstatt Period. If this conjecture is correct, the La Tène art may largely have owed its existence to Celtic thirst.

But from what region was this wine imported? We have good reason to believe that, although the vine was known in France in Quaternary times, the art of viticulture was first introduced into that country by the Massiliotes (Justin, XLIII, 4.2). It seems to have been confined to the Massilia area until c. 120 B.C.³⁷ Although Martial has little good to say of the Massilian wine, Posidonius the Stoic (apud Athenaeum, IV, 36) tells us that the Celts drank wine imported from that region, and also from Italy. Posidonius was born about 135 B.C.

³⁴ The *stamnos* from Klein Aspergle (plate III) also contained a resinous deposit.

³⁵ Déchelette, *Collection Millon*, p. 123.

³⁶ Neugebauer, *Archaeol. Anzeiger*, 1925, col. 201 f.

³⁷ Billiard, *La Vigne dans l'Antiquité*, p. 81. I owe this reference to M.P. Charlesworth.

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and was still living in the year 62. He travelled widely in Gaul, and as the civilization of the Celts depicted by Diodorus Siculus (who seems to have drawn his information from Posidonius' lost work) is that of La Tène II rather than the La Tène III, Posidonius' travels in Gaul may date from c. 100 B.C., or possibly a little earlier. By that time Italian wines had become famous,³⁸ but before the middle of the second century viticulture played little part in the economic life of Italy, the wine then drunk being almost entirely imported from Greece. Pliny (Hist. nat. xiv, 9) tells us that Apollodorus in his list of wines recommended to King Ptolemy (323-285 B.C.) does not mention any Italian varieties, as at that time they were not known (*Italicis etiam tum ignotis*). If this was true for the turn of the fourth and third centuries, how much less must viticulture have been practised by the non-Hellenic inhabitants of Italy from the seventh to the fifth centuries. During early times in Italy, wine seems mainly to have been used medicinally, and it is thought that Numa in his laws ordained that milk should be used in place of it at sacrifices owing to its rarity. The evidence all points to the Celts of our period importing their wine from the region around Massilia, or through Massilia from Greek lands; and it is highly probable, therefore, that during the late sixth and the fifth century, when so many vessels of southern origin connected with wine were found in the Celtic area, the trade between that area and Massilia was maintained if not intensified.

Another substance imported by the Celts was coral.³⁹ Bronzes encrusted with coral frequently appear in La Tène I contexts in the Champagne and other areas. Pliny the Elder writes (Hist. nat. xxxii, 11) that this substance reached the Gauls from the Stoechades (the Îles d'Hyères), but coral also occurs off the Lesser Stoechades (the islands near Massilia). It is found today off the Île Maire, and those who seek it have seen and sometimes recovered *amphorae* lying 20 to 30 metres deep, although so far only types from the first century A.D. have been discovered.⁴⁰ But the Greater Stoechades were the most important coral fisheries of ancient times. Later, according to Pliny, the demand from India deflected the trade in coral from the Celtic region; indeed, as Reinach has shown, there is a great falling off in the

³⁸ Billiard, *l.c.*, p. 71.

³⁹ See S. Reinach's interesting study, *Le Corail dans l'industrie Celtique*. *Rev. Celtique* (1899) xx, pp. 12 ff. and 117 ff.

⁴⁰ Clerc, *l.c.*, i, 287 f.

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number of objects of this substance found in the Celtic area during La Tène II and III.⁴¹ But it is interesting to note that coral first appears in the Celtic region during phase D of the Hallstatt period, the phase in which the Greek influence from the south of France first reached eastern France and south Germany.

Judging from the distribution of southern imports certain modifications in the routes took place during La Tène A. Although the main route still passed up the Saône into the Franche Comté and the neighbouring districts, the demand from a new district, the Champagne area, had also to be met with. A number of finds have been dredged up from the Saône at Chalon (Saône et Loire); most of them date from La Tène II and III,⁴² but La Tène I objects are not lacking. Chalon is known to have been a point where a number of routes converged and it is not unlikely that the highway which connected the Champagne area with the Saône-Rhône complex, branched off from the former river at that point. Groups of southern imports to the west of the Loire and in the Garonne area would, from their geographical position, testify to connexions with the south of France rather than the Alpine passes. Further east, we have the Middle Rhenish 'Chieftains' Graves' with their many southern imports. But as they lie north of a line from Hagenau to Ulm, it is not likely that the route by which the southern imports came, struck the Rhine as far south as it did in the Hallstatt Period (see above p. 430). During phase A of the La Tène Period, it would appear to have continued up the Saône (as well as branching off up the Ain), and struck across Lorraine towards Metz. From this point it reached the Rhine through at least four channels. The chief of these passed through the Birkenfeld-Nahe country, the heart of the Central La Tène A area; the other three made the Rhine to the east of Hagenau, near Worms and at Koblenz respectively.⁴³

It remains to discuss the importance of the part played by the Ticino-Mesocco-Bernardino-Rhine route during Hallstatt D and La Tène A. From a purely geographical point of view, the Rhône-Saône route is the most direct way for southern imports to have reached the

⁴¹ The use of coral did not die out completely. It is found, for instance, on the Witham Shield.

⁴² Hundreds of broken *amphorae* were found at this point. They date, however, from the first century B.C.

⁴³ Schumacher, *Siedlungs und Kulturgesch. der Rheinlande*, I, pl. 8. Judging from the imports in the Berne area, the Rhône-Aar-Rhine route was less important in La Tène A than Hallstatt D.

Celtic area in France; but Switzerland and south Germany might equally well have been supplied by the way of the former route. From the distribution of the cordoned bucket, the Etruscan gold pendants found in the Canton of Berne,⁴⁴ the occurrence of Etruscan spits at Chalon-sur-Saône and Somme-Bionne, not to mention the possibility of some of the beaked-flagons found in the Transalpine region being Etruscan or even upper Italian copies of Greek or Graeco-Italian prototypes, it might be argued that the Bernardino-Rhine route was of capital importance.

It is difficult to determine the direction by which the cordoned buckets reached the Celtic area. Whatever their place of origin, they are best represented in the Bologna and Este regions, and it would seem almost certain that it was from there that the examples found in the Transalpine area came; while some of them beyond a doubt must have entered the latter region by way of the Central and Eastern 'amber routes'.⁴⁵ The examples found on Hallstatt D and La Tène A sites in south Germany may well have come by the former way along its upper Danubian extension. But the occurrence of this type of vessel on a number of sites to the west of the Rhine⁴⁶ might point to their reaching that area by way of the Ticino-Bernardino-Rhine route, especially as examples have been found in the Bellinzona district.⁴⁷

The occurrence of southern imports in that district is not as valuable as might on first sight appear. Neither Déchelette nor Ulrich realize the complexity of the problem presented by these and other Alpine finds; nor is it fully grasped by Randall-MacIver in his masterly *Iron Age in Italy*. Owing to the marked conservatism of these Alpine districts, objects are often found in association which elsewhere would be two to four centuries apart. Thus the chronology of the Bellinzona cemeteries is extremely obscure, and it is almost impossible to say if a grave containing Late Hallstatt objects actually dates from that and not a later period. Reinecke assigns a late date to this whole group of cemeteries. The chronological evidence afforded by finds in this zone

⁴⁴ See Déchelette, *Manuel*, II, 2, p. 283 f. A similar object (though in bronze) has come to light at Peterinsel (Tschumi, *l.c.*, p. 132). Tschumi thinks these pendants are barbaric imitations of Etruscan work, but Forsdyke, in a letter to me, regards them as actually Etruscan. At Ins and Jegenstorf they were found in Hallstatt D contexts.

⁴⁵ See my map facing p. 484 in the *Geographical Journal*, 1925.

⁴⁶ Déchelette, *l.c.*, II, 2, p. 771 ff.

⁴⁷ In graves 61, 62 and 68 at Molinazzo. A fourth example was also found there. Re the chronology of these cemeteries, see Mainzer Festschr., 1902, p. 102.

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is therefore unreliable, an objection which applies to the beaked flagons as well as the cordoned buckets from the Bellinzona cemeteries. Again, if the latter came by the Bernardino-Rhine route, how is it that we find no examples of the contemporary 'situla style' in the regions which that route would normally supply? For examples of the 'situla art' abound in precisely those regions of upper Italy in which the cordoned bucket is most frequently found. No examples of this interesting style have occurred as yet in the area west of the region supplied by the Central 'amber route': it is quite foreign to France, Switzerland and the western parts of southern Germany. It seems not unlikely, therefore, that the cordoned buckets reached the upper Danubian zone by the Central route, and, that passing up the upper Danube, they eventually found their way into France. We know that close relations existed at that time between eastern France and the upper Danubian area.

Again, although Greek pottery of the seventh to the fourth century is found in France and southern Germany, the hundreds of graves in the Ticino area have not as yet furnished a single Greek sherd of those dates.

But there is a still greater objection to the Bernardino-Rhine route being the highway along which the stimulus travelled that played so great a part in the genesis of the La Tène culture. Schumacher has shown that in Transalpine Switzerland and southern Germany, south of a line through Hagenau, Rastatt and Stuttgart to Ulm, the civilization of La Tène A is virtually unrepresented, and that in its place we find a survival of the Hallstatt D culture.⁴⁸ *If the stimulus which contributed so largely to the birth of the La Tène style came by the Bernardino-Rhine route, is it possible that the earliest phase of the La Tène culture should be altogether lacking in those regions which lie closest to the point where that route debouches from the northern slope of the Alps?* It may be argued that this phase is equally lacking in the Rhône valley between Orange and Lyons. But in the former region we find a pertinacious and comparatively well-represented Hallstatt D culture, whereas in the Rhône valley hardly any grave-finds are known between the above two points. This may partially be due to the latter not having been as systematically explored, but in event of no such finds materializing, the district in question must be regarded as a 'corridor-district'. If the Rhône is in our days prone to flood, the bad climate of the Sub-atlantic period⁴⁹

⁴⁸ Ebert, *Reallexikon*, viii, pp. 264-6.

⁴⁹ For these conditions, see C. E. P. Brooks' *Climate through the Ages*, 1926, p. 339 f.

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must have rendered it a great menace to fixed settlers. Early traders were more or less birds of passage, and were free to choose favourable times for their long and often perilous journeys.

We are now faced with a difficulty: an influence from those parts of Italy outside the area of Greek colonization is still to be reckoned with. How could it have reached the Celtic region without crossing the Alps? Were the above Etruscan and Italian imports, other than cordoned buckets, shipped to Massilia, thence reaching the Celtic area by the above-mentioned routes? Was there a connexion between Massilia and central Italy as early as the sixth and fifth centuries B.C.? The most serious objection to such a possibility is historical rather than archaeological. After the fall of Phocaea in 540 B.C., part of that city's inhabitants founded a colony at Alalia in Corsica. In 535, the Carthaginians and Etruscans united against them; a battle was fought off the coast of Sardinia which resulted in two-thirds of the Phocaean fleet being destroyed, and the seizure of Sardinia and Corsica by the Carthaginians and Etruscans respectively. But the allies suffered such severe losses that Herodotus tells us the Phocaeans won the battle. If they did, it was a somewhat Pyrrhic victory! After their flight from Alalia they founded the colony of Velia in Lucania. The years following the battle of Alalia were doubtless critical ones for the Phocaean colony Massilia, and scholars have stated that her commercial enterprise was greatly curtailed thereby. But, as far as Massilia's eastern connexions were concerned, this should not be over stressed. It was the Alalians, not the Massiliotes, who were principally concerned in the above battle. We have no reason to suppose that this Etrusco-Carthaginian alliance was other than ephemeral: the Etruscans took no part in the battle of Himera (480 B.C.), in which a Carthaginian fleet was destroyed by the Greeks. The foundation of a Phocaean colony at Velia was bound to further relations between that region and Massilia. The troubles of Massilia at that time lay to the West (their commercial enterprise there suffering a severe set-back from the Carthaginians),⁵⁰ not in the East. The fall of Phocaea (540 B.C.) did not necessarily sever Massilia's connexion with the east Mediterranean. Although relations with the mother-city were at an end, there were other Greek states in that region whose wares the Massiliote merchant could trade with the West. It has been suggested that the Massiliotes played a part in the exportation of Attic pottery to Italy: while the

⁵⁰ Clerc, *loc. cit.*, I, p. 329.

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signatures of the artists and the inscriptions of the paintings on these vessels were in the Attic alphabet, the price-marks are in Ionian letters : Massilia was an Ionian colony, and the maritime enterprise of Athens only began after 480 B.C.⁵¹ As Randall-MacIver observes, Cumae was not the sole distributing-centre of Greek wares in Italy. There were probably 'ports échelonnés all the way up the western coast at which oriental and Greek traders made it their habit to call'.⁵² In the Campania region he sees various manifestations of Etruscan influence : 'a whole class of handsome black *bucchero* in Campania which has never been sufficiently studied, shows strong Etruscan influence, though it is evidently of local manufacture'.⁵³ In this connexion we should note that *bucchero*-ware came to light among the finds at Fort St. Jean (Marseilles),⁵⁴ and that Italian geometric pottery of the sixth century was found at Baou-Roux.⁵⁵ Finally, although one should be wary of taking the evidence of Livy (I, 45) and Justin (XLIII, 3.4 and 5.1) too literally, the friendship between Massilia and Rome goes back to very early times. On the whole, therefore, it is not unlikely that there were over-sea trade connexions between Massilia and those parts of Italy outside the area of Greek colonization. Nor should one ignore the possibility of Etruscan and Italian objects reaching the Celtic area from the seventh to the fifth centuries by sea through Massilia, for in our present state of knowledge there is less to be said against their coming by this route than by upper Italy, the Bernardino and the Rhine.⁵⁶

When we have proof of the existence of the La Tène A culture in south-westernmost Germany and in Switzerland, when definite evidence is forthcoming as to Upper Italy being a centre of manufacture of bronze vessels copied from Greek prototypes, and when the tangled chronology of the south Alpine cemeteries has finally been unravelled, it may be possible to regard the stimulus which contributed to the genesis of La Tène culture as also having reached the Celtic area by the Bernardino-Rhine route. But, until these three obstacles have been

⁵¹ This suggestion is advanced by Miss Adams in her *Study in the Commerce of Latium* (*Smith College Classical Studies*, II, p. 11).

⁵² Randall-MacIver, *Iron Age in Italy*, p. 167.

⁵³ *Ibid.* *loc.*, p. 168.

⁵⁴ CRAI, 1910, p. 430. Vasseur is inclined to assign it to the seventh and sixth centuries.

⁵⁵ Déchelette, *loc.*, II, 3, p. 1001.

⁵⁶ The so-called Campanian vessels found on more than one site in southern France date from the fourth and third centuries. They are of Graeco-Italian origin and were made in Campania, Lucania and Apulia.

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overcome, it is safer to regard that route as being of secondary importance, when compared with the influence which was transmitted to the Celtic world by the Greek colony of Massilia.⁵⁷

In the centuries following the Gaulish invasion of Italy, the importance of the Bernardino route seems to have reasserted itself. The reason for its lack of prominence in our period is not easy to find. Gams and Nordhagen⁵⁸ hold that the Sub-atlantic 'climate-crash', which took place c. 850 B.C. and reached its second rainfall maximum c. 500, affected trade over all the Alpine passes above 2000 metres. The height of the Bernardino is 2063 metres.



FIG. 2. LATER TYPE OF FLAGON. FROM SOMME BIONNE.
By courtesy of the British Museum Authorities

⁵⁷ In Reinecke's opinion the finely incised zoomorphic style, as seen on the girdle-plate from Cerinasca (grave 93) and the Rodenbach field-flask, may have come from north-west Italy, presumably by the Bernardino-Rhine route. This type of art played but a slight rôle in the development of the La Tène style.

⁵⁸ *Postglaziale Klimadänderungen* (*Geograph. Gesell.*, Munich, xvi 2, 1923), p. 220 f.

PLATE I



THE LAVRA: TRAPEZA OR REFECTORY HALL.

The Monasteries of Mount Athos

by D. TALBOT RICE

THE peninsula of Athos, home of monks, resort of pilgrims and the sole surviving example of the life of the Middle Ages which exists in Europe, is the only spot in these days of hooting motor cars, roaring machinery and rushing, busy people, in which it is possible to lead a completely altered life. There only in Europe can one meet an entirely original mental outlook. Even in the remotest European village everyday life is of this age and it is only by exercising the imagination that one can transfer oneself to the past. But on arrival on Athos this earth is left behind and one begins to experience the life of a pilgrim of the Middle Ages. One sees from actual experience what that life really was, and one continues to live it until the discomforts of the thirteenth century finally persuade one that the evils of this age are amply repaid by its merits and that the romance of the Middle Ages is even excelled by the adventurous spirit of today. The medieval life is something that one likes to remember as a curiosity, something to be experienced occasionally only. But the claims of its art are more lasting and in these days of ease and luxury we can appreciate them the more fully.

The discomforts, the food and the petty annoyances of everyday life are a prominent feature of the peninsula, but all this is soon forgotten, while the amazing beauty of the scenery, with its wide sweeps of wooded hills, dominated by the great bare pyramid of the Holy mountain and the charm of the monasteries, nestling round it like little birds under the wings of their mother, live as a lasting memory. In addition to this, add the inestimable treasures of the libraries and sacristies and above all the churches with their many domes, their walls painted outside with colour-wash and inside with elaborate frescoes, and the interiors filled with all the gorgeous trappings of the Eastern Church. To some the interiors seem over crowded, but a careful examination will soon lay bare the merit of several at least of the icons and disclose the beauty of the elaborately carved iconostases. These will never be forgotten by any who have had the luck to live among them for more than a very few days.

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Although there is considerable variation in the different monasteries owing to the difficulty of building as often as not on the top of rocky precipices, the plan of all is basically the same. Unlike monasteries of the West, where the church usually occupies one side of a square—a tradition which is carried on today in the colleges of Oxford and Cambridge—it is on Athos placed in the centre. Around it and enclosing it completely stand the buildings of the monastery itself. On the north, south and east these consist of living rooms, usually on the first or second floors, with store-rooms, wine presses or workshops below them. On the west are more rooms, or more often the entrance gate, and at one of the western corners is a massive tower, once a stronghold or keep, but now utilized as the library. The towers have been selected for this purpose as, being of stone, they are less liable to be destroyed by fire than the flimsier but less grim dwelling rooms. These have stone foundations and are as often as not of stone above, but the walls are thin compared with those of the towers, and outside the windows run balconies of wood which serve in the case of fire as passages along which the flames rush with their full vigour, fanned by the breezes which cannot reach the floors and roofs within.

Standing free in the court, and where space permits, immediately to the west of the church, is the refectory or *trapeza* (plate 1). It is usually in the shape of a T or ⋈ , and is large enough to hold the monks of the monastery and the hermits from cells and *sketae* or priories which are dependent on it. The floor is of stone, the roof of wood with fine great beams, and the whole effect is not unlike that of some English baronial hall of the Middle Ages. The tables are usually of rough hewn wood and the benches of the same material, but sometimes, as at the Lavra, they are of stone. Here the original D shaped tables with fixed seats like miniature walls are more than usually picturesque, but one pities even the most hardened of anchorites who had to eat at them. Today they are spared the agony, for the refectory of the Lavra is no longer in use.¹

More interesting than the tables and benches are the walls, every square inch of which is covered by frescoes of the same type and frequently by the same hand as those that decorate the church. The subjects are usually chosen from the apocrypha and represent scenes

¹ The monasteries of Athos are now divided into two classes, the cenobitic and the idiorrhythmic. The former are ruled over by an abbot; the latter, less strict, are governed by a committee. It is only in the monasteries of the former type that the refectory is used.

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which are not included in the church itself, where restriction is put upon the artist by the limited space and by the fact that the more important scenes of the Bible story must be included there. In the refectory he is less bound in the choice of his subject, but the painting is still subject to tradition, and the tradition of style that bound the Byzantine artist was far more severe than any that the religious painters of the West ever experienced. All Byzantine, Greek and Slav painting is based on this tradition, and in order to appreciate fully the art, which may be described in general as Byzantine, one must continually bear in mind the fact of the tradition, as well as remember that the art set out as a decorative one, that its chief purpose was to decorate religious buildings, and that it began at a time when the church was much more of a living entity than we know it in the West today. Scenes which to us seem definitely secular in character were thus in early times included in the corpus of church decoration, and though later the Fathers became much more strict, the old style of thought, which did not see so very great a difference between things religious and things secular, still survived, as it did in the Middle Ages in the West.

In addition to all this, Byzantine art was nurtured in a city which is even today the meeting place of East and West, namely Constantinople. There the influence of prosaic but decadent Rome strove with the purer but less energetic one of Hellenistic Greece. As these became weakened by their struggle there entered the dreamy, non-realistic, soaring mentality of the East, which was later the mark of a turning point in the nature of early Christian art. The union of the three was Byzantium, in the widest sense of the word, and the immediate outcome was the cathedral of Saint Sophia. The mosaics which adorned the cathedral were characterized by their non-representational style. Portraiture from the living model, whether human, animal or flower, was not the ideal that the artist sought. Rather he wished to decorate the building by the contrast of forms and by a contrast of lights, shadows and colours. And although we see numberless figures in the frescoes of Athos we must never forget that at heart they are purely decorative, and that it is by their power to decorate that we must judge them and not by their likeness to any living model.

The best of the frescoes, both in churches and refectories, are to be found in the higher registers, which depict scenes from the life of our Lord, or less often from the Old Testament, laid out in series like a panorama. Below are large figures of Saints standing singly, often of life-size. The style of these is less free, especially in the faces, and the

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tradition of the Roman tomb-paintings is more rigorously followed. The number of these saints is enormous and wherever one looks one seems to meet with a new name. They please most in a small church, where the number is limited and where the variation of treatment can be appreciated. In the larger buildings, even if the artist was a master, the folds of drapery become more than monotonous and it is only in an occasional face that one can detect the real genius of the painter.

But a discussion of the frescoes belongs more properly to the churches of which they form so essential a part and before reaching them we ought to examine the monastery which protects them in closer detail.

The main door of the refectory faces, when space permits, towards the east, and near it, separated by a small patch of open ground is the west door of the church. Standing free between it and the refectory, or sometimes slightly to the north or south, is the *phiale* or sacred well (plate II), whose water is used for blessing the church and the monastery, each room being individually consecrated once a year. Above the well is a dome, supported on eight or more pillars, the spaces between which are filled in by stone closure slabs in the lower levels. Above, the *phiale* is open to the air. Within is a marble basin which is kept empty except on ceremonial occasions. Here too the Byzantine artist, seizing on every available space, often painted frescoes on the inside of the dome, but owing to the exposed position any that were old have perished and the glaring colours of late restorations often deter a closer examination, which might lay bare excellence of design. For the restorers, although their colours are somewhat unpleasant, followed the design of the original fairly closely.

With the refectory and *phiale* close by and in the very centre of the court stands the church, the chief feature of each monastery, which forms in fact as well as in theory the core of the whole. The reason for this is not far to seek. It is a purely defensive one, following the plan of the typical *han* or hotel on an enlarged scale. On the outside grim walls, the monotony of whose upper reaches only is enlivened by windows or balconies, stretch up to the sky. Of doors there is only one, the main gate, strong and forbidding, which is closed for the night at eight o'clock and which will not be opened until the next morning. On the outside of the gate is sometimes a porch, as at the Lavra, but this is a later addition and the earliest dates from the eighteenth century. Inside the gate hang a few weapons for the use of the porter, if robbers present themselves. Then a narrow passage leads to the court. Here the

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picture is a very different one. All is peace and the whole atmosphere is one of ease. Up the walls run numerous stairs and on the outside of each story run open balconies, connecting curiously with one another in a manner picturesque beyond measure, but infuriating to the visitor who does not know their intricacies.

Such in general is the plan that has been adhered to since the earliest days, even when rebuilding after the various fires which have from time to time laid low entire monasteries. Robert Curzon, who visited Athos in 1837, tells a gruesome tale of the ruin he saw in one monastery which must have seemed the more severe to him as a collector of books, for it had affected the library. Any volumes that had been spared by the fire were mouldering in the wet, for the tower in which they were kept had never been reroofed.

Later architectural work which the fires have necessitated has been universally successful on Athos, and two of the most impressive monasteries which the visitor sees today, Simopetra (plate iv) and St. Paul's (plate v), date only from the end of the last century. In plan the original has been exactly followed, but in the upper structure slight alterations have been made, due to insufficient or inaccurate drawings of the older buildings. In every case where comparison is possible it can be seen that the new work is every bit as good as the old, every bit as original and every bit as imaginative. The Byzantine style and the Byzantine mentality which is responsible for it still persist today, and the peninsula, unlike the rest of the world, which adopts the worst of America rather than the best, has chosen only the material that suits the scenery and helps the individuality of its style of building.

The living rooms vary in size and comfort according to the means of the monastery to which they belong, but one feature is invariably constant, the balcony. On the northern side, where the hills descend to the sea in a gradual slope, access to the walls of the monastery is comparatively easy (plate vii). As a result the walls are blank and only high up does a verandah appear. More elaborate display of this nature is left for the interior. On the southern side, however, especially near the extremity of the peninsula, the lie of the land is very different. Here the monasteries, Simopetra, Dionysiou and Gregoriou for instance, stand on the tops of prominent crags, surrounded only by rocky peaks. Access is only possible on one side, where the crag on which the monastery perches is connected with the slopes of the Holy mountain behind. With no danger of marauders on the seaward side, the balconies can jut out freely. Each story has one, which acts as a

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connecting passage between the rooms on the outside. Tier upon tier they rise, each acting as a roof to the one below it, up to the highest floor, where the roof of the building itself is prolonged over the balcony. Nothing is more picturesque when seen from a distance and nothing can be more perilous, one thinks, as one walks along them accompanied by the rattle of loose planks, and as one gazes down some hundreds of feet to the sea below.

Mr Byron, in his book, *The Station**, makes an interesting comparison between Simopetra, perhaps the most picturesque and most original of all the Athos monasteries, and the Potala palace at Lhasa, which is built in a style almost identical. Were similar surroundings and the rigours of a monastic life responsible for both? The similarity is striking, but no less striking is a comparison of the type of building found on the northern side of Athos with that of some of the most modern architectural feats of London. In both the walls stand up as austere masses of stonework, penetrated it would seem only here and there by windows of minute size. In both cases the appearance is deceptive, for the windows are in reality not so very small and the rooms which they serve are light and airy.

The interior decoration of the rooms does not concern us here. Any who desire to see them pictured must turn to Mr Byron's book. Let us instead walk down one of the numerous stairways that give on to the court and find our way to the church.

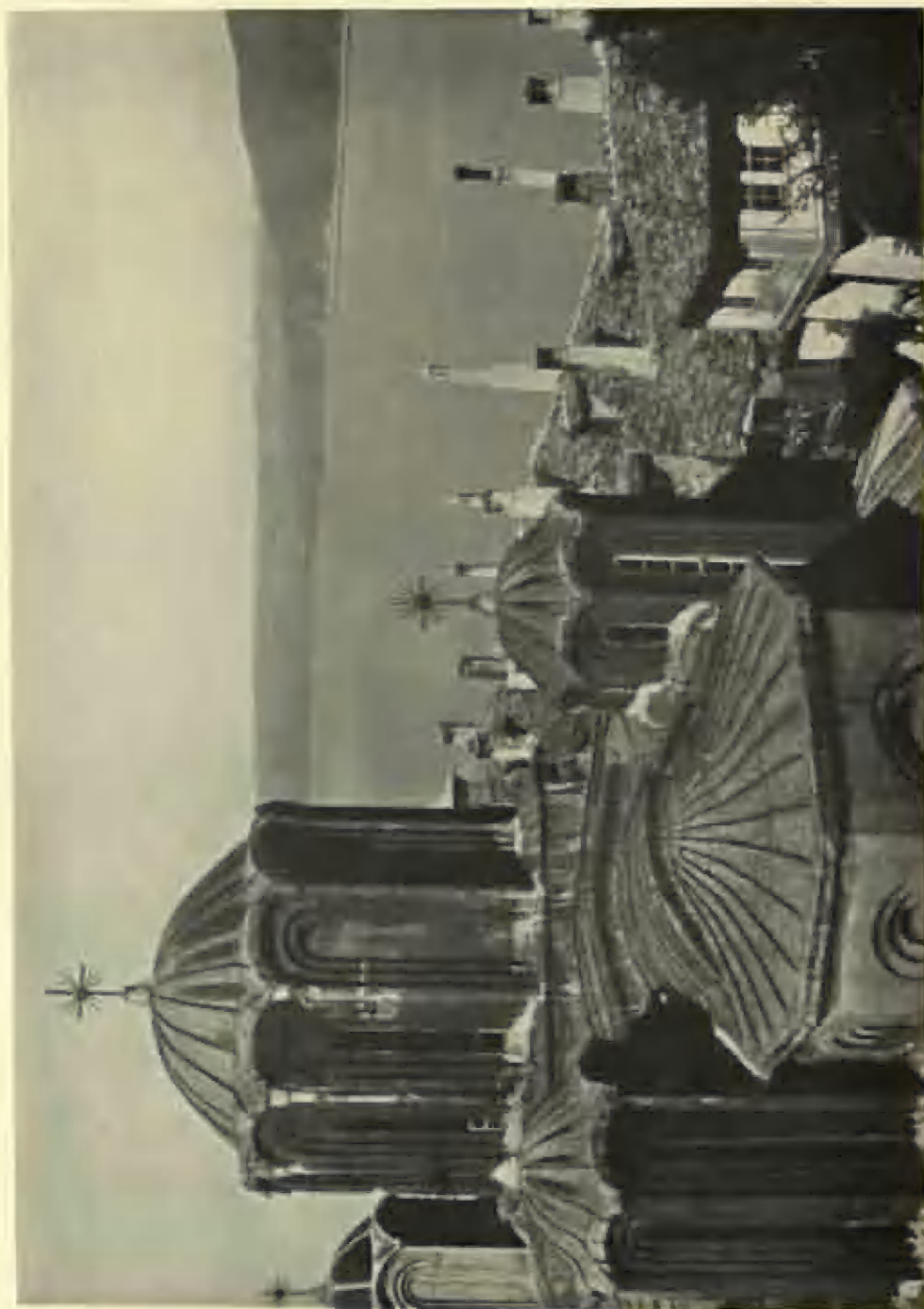
Outside it is easily distinguished by its domed roof and by the apsidal terminations of the eastern end. In plan the Greek cross is followed, but when additions have been made it is not always too easy to distinguish it. At the point of intersection is the principal dome, with mosaic or fresco of Christ the Pantocrator within. Immediately to the east of this stretches the choir, with apsidal end at the east. On either side of it is an apsed aisle or chapel, used principally by the priests during the service. These are entered from the west by a door opening directly into the transepts, or from the sides by a door opening into the choir. To the north and south of the dome stretch the transepts, ending again in apses facing north and south. Between the choir and the transepts stands the iconostasis on which are hung some of the icons which, ever since the days of the iconoclast emperors, have constituted so essential a part of the Greek rite. So numerous are they indeed that the iconostasis has become far too small to hold them

* Robert Byron, *The Station: Athos, treasures and men*. Duckworth, 1928.

PLATE II

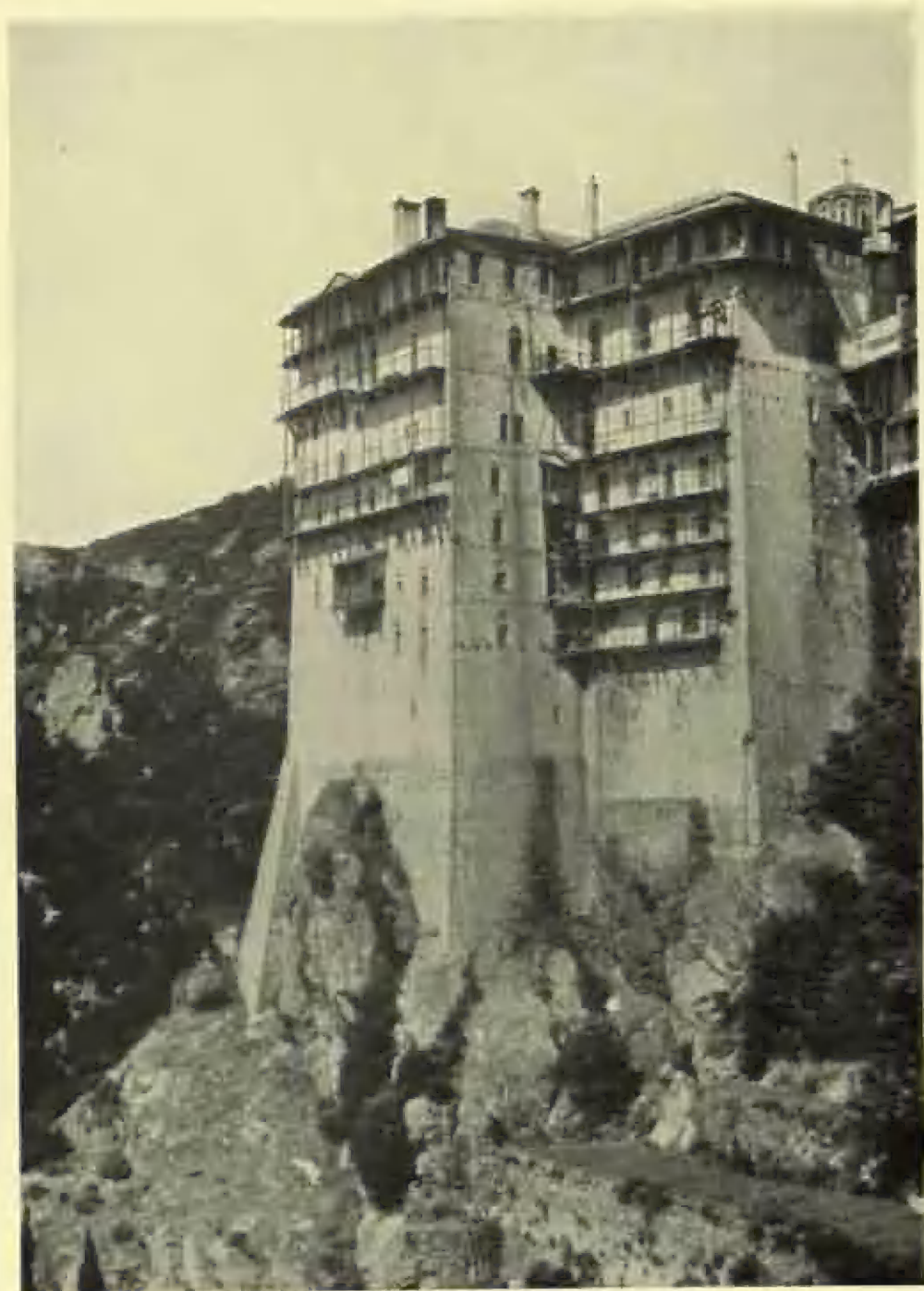


THE LAVRA: PHILAE AND WESTERN END OF CATHOLICON



THE DOMES OF DOCHARTOU

PLATE IV

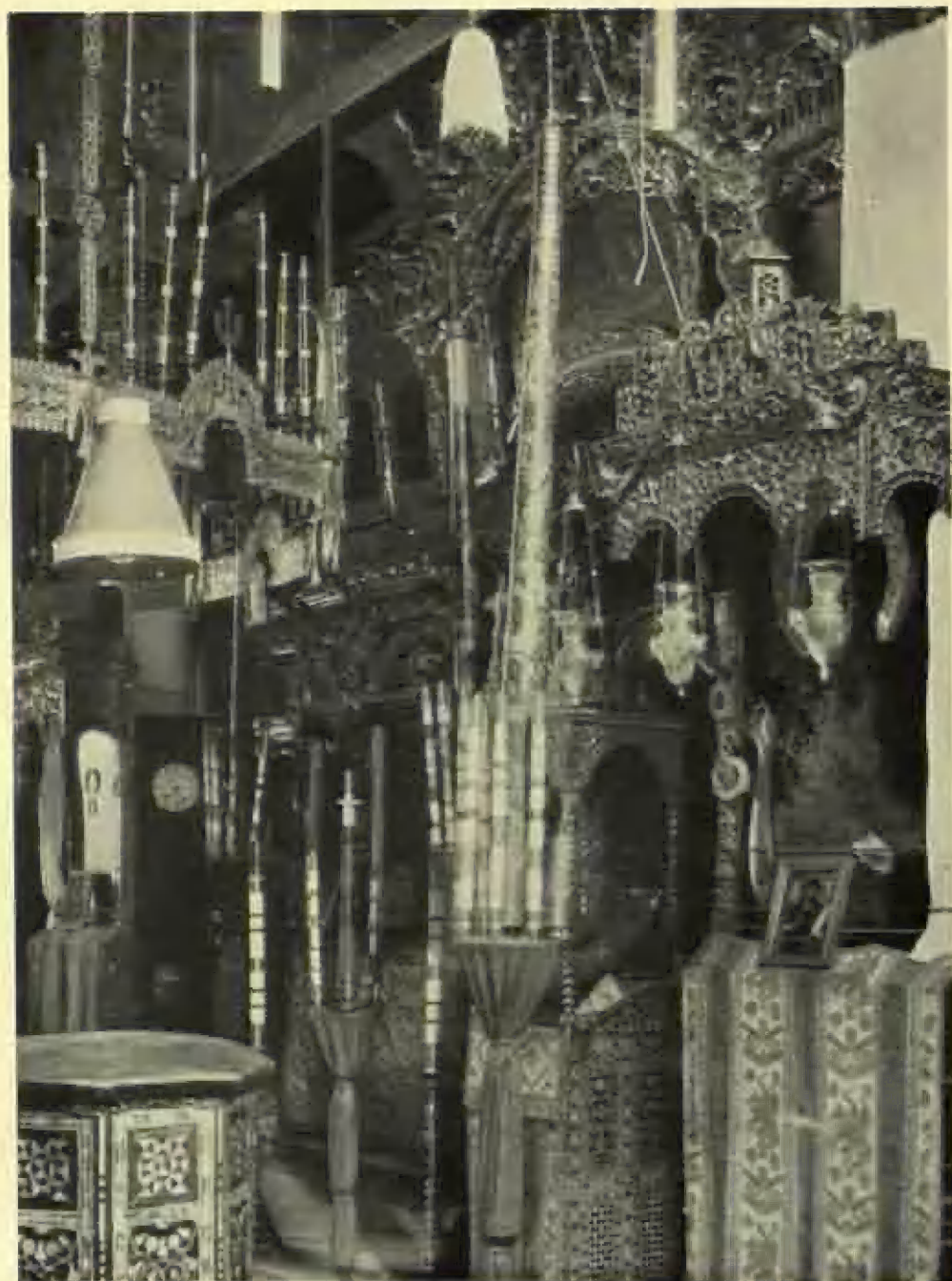


THE MONASTERY OF SIMOPETRA

PLATE V



THE MONASTERY OF ST PAUL



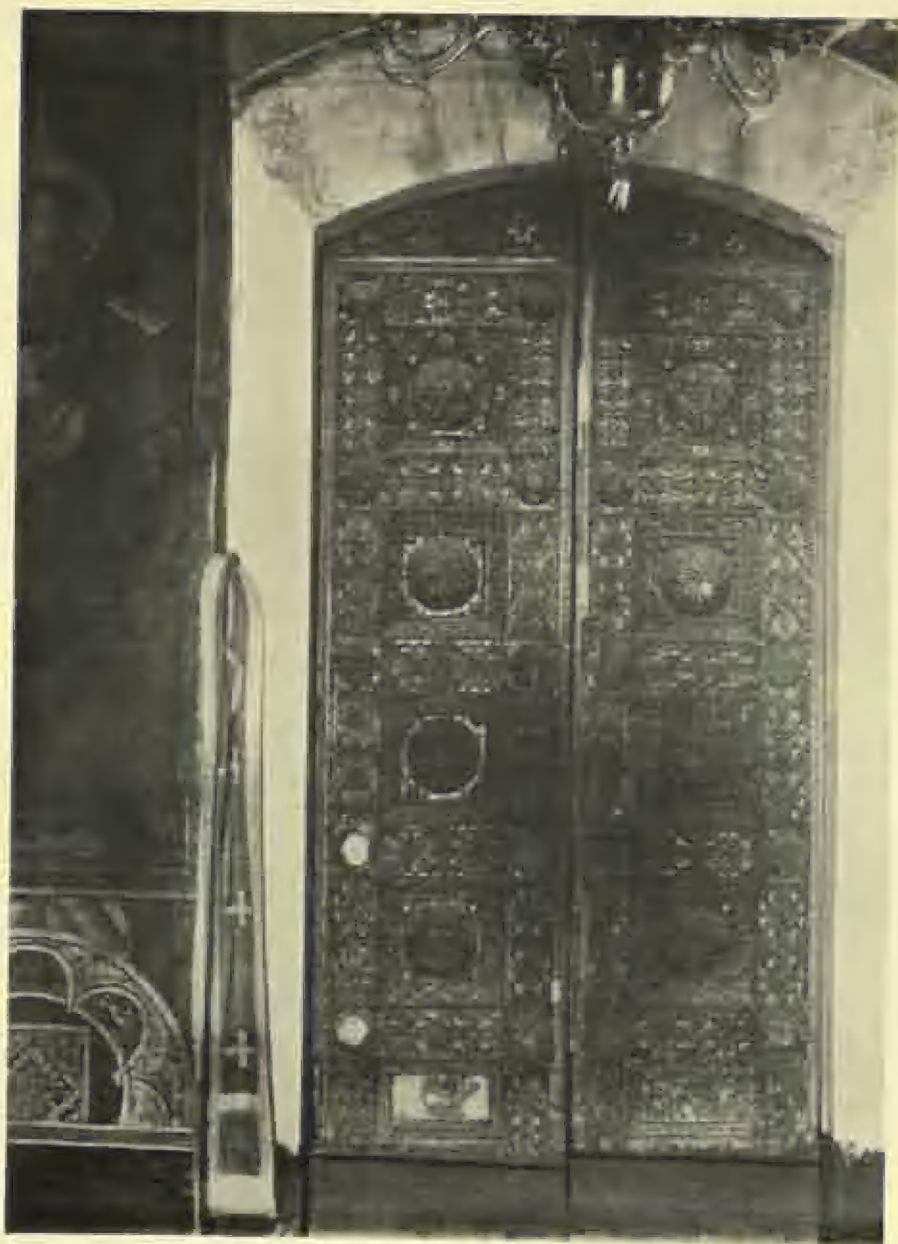
INTERIOR OF THE CHURCH OF DIONYSIOU SHOWING CANDLES, ICONS, AND CARVED ICONOSTASIS

PLATE VII



THE LAVRA FROM HOLY MOUNTAINS

PLATE VIII



CENTRAL DOORS OF DIONYSIOU CHURCH

PLATE IX



TYPICAL REPRESENTATION OF FRESCOES: GENESIS

THE MONASTERIES OF MOUNT ATHOS

and they are stuck up wherever space permits, hiding the lower parts of the frescoes on the walls like small pictures before big ones in some dusty antique shop.

The iconostasis is now usually of wood, finely carved, but in some of the churches remains of the stone ones which preceded them are still to be found, buried under the wood of later work. In the centre of it is a gate with wooden door standing to the height of about three feet. Above it the opening is closed by a curtain which is raised at certain moments during the service so that the congregation may have a view of the altar within. (Plate VI).

To the west stretches the nave or narthex, which varies in length in different churches according to their richness, and to the west again is the exo-narthex with a small dome at each end of it. It runs from north to south and forms a kind of portico, into which opens the west door of the church itself, and, if the foundation be a rich one, those of the lateral chapels on either side of the nave. (Plate VIII).

The oldest church on Athos, the Protaton at Karyes, which acts as a sort of cathedral in the tiny capital, is of a somewhat different plan, but the churches of the monasteries are surprisingly similar when one considers that the dates of building vary over some four centuries. The church of the Lavra, belonging to the eleventh century, is a striking example of the most sumptuous type, where lateral chapels are present both beside the choir and beside the nave. In style the church of Iveron, belonging to the preceding century, is very similar. By the sixteenth century only very slight changes have come in. The plan is the same, but above the builder has become more ambitious. The walls are higher and the windows large, so that the interior is much lighter and the domes have developed into a kind of turret with windows all around it. The actual roof surface of the domes is thus lessened and the picture of the Pantocrator, which had been such a dominating feature in the older churches, is diminished in size, is pushed upwards, and is more brightly lit. As a result it becomes less mysterious and has, in the later frescoes, lost a great deal of its importance.

But not so the other pictures. If the twelfth century had been the age in which the art of decoration in mosaic reached its height, the thirteenth and fourteenth were those in which fresco painting began to come into its own, not only on Athos but over the whole Byzantine world. The richest days of the Empire were over and her great cities were falling one after the other before the onmarch of the Turk. With this decline of temporal power spread a wide reaching wave of popular

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religious feeling. In this age the churches may be poorer and less sumptuous as regards their contents, but they become far more numerous and far more the possessions of the people. Before they were rich and well cared for, supported by and decorated at the command of an emperor or powerful noble. Now they are supported by local subscription and the congregation has a say in their maintenance. As well as benefiting from the pleasures and mysteries of the services it has to undertake a share of the costs and to experience the responsibilities of upkeep. As a result the churches become far more expressive of the mentality of the age in general and if the decoration or the building itself has lost by the limitation of expense, it has gained in that it is the expression of a sincere religious feeling. The paintings of the age show this sincerity. They are religious in matter, they are artistic and decorative in effect, and at the same time they give an idea of the life of the day and express now and again the curious workings of minds thoroughly Byzantine, more so than those of the cultured court circles could ever have been.

None of the existing frescoes on Athos are very early in date—all are posterior to the conquest of Constantinople in 1453 by some hundred years. They belong distinctly to two schools, the Macedonian, as exemplified by the works of the painter Panselinos at the Protaton, and the Cretan, as seen at the Lavra. The two styles are as different as Flemish and Italian religious paintings of the 'primitive' style, and among art loving Greeks there is as much partizanship for one or the other school. The chief difference lies in the treatment of the individual, especially as regards the effects of light and shade. The chief character of the Cretan school is the unusual use of high light. The robe or garment is painted in colour and the folds are emphasized by lining in the light part in white. Dark shading is much more sparsely used and much less often resorted to.

Much has been said about the figures and the chief subjects of this later Byzantine painting, but little about the backgrounds of the pictures, which throw the clearest light on the life of the day and which are the most obvious expression of the thoughts of the painter. (Plate ix). Here the formal nature of the art is seen at its full. Stars are geometric patterns, the relation of whose lines to one another is of the greatest importance in the composition of the pictures. Halos act as frames to faces or are developed as backgrounds to entire bodies, with curious patterns in line and colour, akin in ideal to the formal designs of a Picasso. Trees are geometric patterns, heavy bodies used to the

THE MONASTERIES OF MOUNT ATHOS

greatest effect for purposes of balance. But most interesting are the houses, with two or three floors, pointed roofs and overhanging eaves. Perspective is lacking, but their decorative power is thus enhanced all the more and one sees them not only as houses that could be lived in, but as pieces of a scene, before which stand the actors of a particular piece. On looking at one of the frescoes at Xenophontos one forgets the religious scene in the foreground in the imagination that it is a creation of the Russian ballet and that in one of those houses lived the miller of the 'Three Cornered Hat'. In another in the same monastery the fact that the house is a house at all has been entirely forgotten. It has been neatly bound round with a wide ribbon, tied in a bow, like a chocolate box. In yet another, the scene of our Lord's miracle where the bed was lowered through the roof is portrayed. One sees the house and one sees the hole in the roof, with the sick man's relations standing by it, holding in their hands the ropes to which the bed is attached. But it has been let down, not through the hole, but on the outside of the house.

Such was the Byzantine mind which produced the frescoes, exuberant with imagination, which produced the buildings, more *aery* than Neuchwanstein yet as solid as Adelaide House, and which has preserved through so many years a life long since forgotten elsewhere. Had the Turks not left their own continent, had they not invaded that inhabited by a people of such a very different nature, what would have been the result? One wonders what the Byzantine mind would have produced in eastern Europe.

The Copper Mountain of Magan*

by HAROLD PEAKE

ONE of the most interesting problems of antiquity is the origin of metallurgy. The metals first used seem to have been gold and copper, and it has been felt that if we could ascertain where the earliest civilized people obtained their ores we should be on the way to finding out which group first made the momentous discovery that copper could be melted and cast in a mould.

With a view to solving some part of this problem, the Anthropological Section of the British Association, at the Toronto meeting in 1924, appointed a Research Committee to report on the probable sources of the supply of copper used by the Sumerians. The present writer was appointed chairman of this committee, and this is his only excuse for making public the results of the labours of others, and the secretary from the beginning has been Mr G. A. Garfitt, to whose untiring energy is due the work that has been accomplished. Several leading archaeologists, with experience in excavations in the Near East, were added to the committee, as well as Dr Cecil Desch, F.R.S., Professor of Metallurgy at the University of Sheffield, and, at a later date, Professor C. O. Bannister of the University of Liverpool. The examination and analysis of the specimens have been carried out by these professors and their assistants.

Mr Garfitt's first task was to obtain specimens of copper objects, of as early a date as possible, from various sites in Mesopotamia. These were willingly supplied by Dr H. R. Hall, of the British Museum, Mr C. L. Woolley, Mr E. Thurlow Leeds, Dr Stephen Langdon, Sir Flinders Petrie and the Field Museum of Chicago. Dr Thureau-Dangin also very kindly supplied a sample from a copper axe-head (no. 10759), found in the lowest layer at Susa, from the collections at the Louvre.

Our energetic secretary then began to collect as many specimens as he was able of copper ores from Asia Minor, Persia, Cyprus, Egypt

* Read before the Seventeenth International Congress of Orientalists at Oxford, 29 August 1928.

THE COPPER MOUNTAIN OF MAGAN

and Arabia. In this he received much assistance from Major Blomfield of the Department of Overseas Trade, from Colonel Woods, the British Commercial Secretary at Constantinople, Mr R. H. Hadow, the British Secretary in charge of commercial affairs at Tehran, and a number of the consular officers in the Turkish and Persian Empires, some of whom made searches in most inaccessible places and under very trying climatic conditions. He also received valuable assistance from Sir Arnold Wilson, of the Anglo-Persian Oil Company, and from several others engaged in commercial undertakings in the Near East. All samples from early objects and ores were sent to Professor Desch for analysis and some to Professor Bannister, who undertook a microscopic examination of the metals.

Analysis showed that the axe-head from Susa, unlike the other specimens submitted, was of remarkably pure copper; there was a faint trace of nickel, but all other impurities were absent. At first it was thought that perhaps the ore used had been native copper, and search was made for ores of this type. Two samples only were obtained, one from near Angora and the other from Arghana, which lies between the Euphrates and the head of the most westerly tributary of the Tigris. An analysis of these gave the following results:—

		Copper	Tin	Iron	Nickel	Sulphur
Angora	..	99·83	tr.	0·17	—	—
Arghana	..	97·08	0·27	2·13	0·03	0·49

The Arghana deposits lie near enough to Mesopotamia to have been a possible source for the Susa axe-head, but the ore is not of sufficient purity. The Angora mine, the ore from which contains very little impurity, seems to lie at too great a distance to have been utilized by the people of Susa. Professor Desch is of opinion that 'it is very likely that the pure metal has been obtained by smelting malachite, a mineral of such characteristic appearance that it would be easily recognized by the early metallurgists, and often of high purity'.

On the other hand the copper objects from the Sumerian settlements, and in fact all other samples from Mesopotamia dating from before 2000 B.C., contained small quantities and sometimes a considerable proportion of nickel.

The following are some of the samples examined:—

Three specimens from the earliest graves at Ur, dating from before the first dynasty of that city: cited as U.A., U.B. and U.C.

Six specimens from the 1928 excavations at Kish: cited as K.

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One specimen from mound A at Kish : cited as K.A.

Bronze specimen from mound w at Kish, of the time of Nebuchadnezzar : cited as K.W.

Lion frieze at Tell-el-Obeid : cited as O.L.

Nail from Tell-el-Obeid : cited as O.N.

Nail from Irak, sent by Miss Bell, dating from about 2000 B.C. : cited as I.N.

Five specimens of bronze from tombs in the Islands of Bahrein, dating from about 1200 B.C. : cited as B.

A copper nail, attached to a Sumerian statuette of elacolite, in the Ny-Carlsberg Glyptothek at Copenhagen, and attributed to about 3000 B.C., was analyzed by Professor John Sabelian ; the result, which was published in *Ancient Egypt*, 1924, p. 12, is given at the bottom of the table, where it is cited as s.

The analyses were:—

	Copper	Tin	Lead	Nickel	Iron	Sulphur	Gold	Arsenic
U.A.	84.18	12.00	1.62	2.20	—	—	—	—
U.B.	85.13	11.78	1.13	0.25	1.74	—	—	—
U.C.	85.01	14.52	0.47	tr.	—	—	—	—
K.156693	57.12	8.21	—	0.05	—	—	—	—
K.156835	67.46	8.60	—	0.05	—	—	—	—
K.156688	68.40	10.70	—	0.17	—	—	—	—
K.156796	80.30	2.52	—	0.09	—	—	—	—
K.156700	64.42	5.33	—	0.02	—	—	—	—
K. no numb.	78.12	5.17	—	0.005	—	—	—	—
K.A.	94.01	0.43	0.58	3.34	1.31	0.17	tr.	—
K.W.	88.16	4.65	0.15	tr.	6.16	0.42	—	—
O.L.	98.81	tr.	—	0.12	0.98	0.09	—	—
O.N.	99.21	0.16	—	0.23	0.25	0.12	—	0.02
I.N.	88.60	9.77	0.68	—	0.28	0.17	—	tr.
B.5.	89.07	9.60	0.27	—	0.53	0.53	—	—
B.6.	87.76	11.70	—	—	0.54	—	—	tr.
B.3.	94.69	3.18	0.47	0.27	0.44	0.95	—	—
B.7.	77.53	19.27	1.40	0.52	0.94	0.34	—	—
B.8.	82.16	16.57	tr.	—	0.75	0.52	—	—
S.	95.07	—	—	0.28	0.86	—	—	—

It will be seen from these analyses that a high percentage of nickel was found in an object from one of the early graves at Ur, and from mound A at Kish, while a small, though appreciable, quantity was found in all the remaining specimens, except that from mound w at Kish, of the time of Nebuchadnezzar, the nail from Irak, dated at about



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2000 B.C., and three of the five specimens from Bahrein Island, which are believed to date from about 1200 B.C. From this it is clear that the people of Susa 1 used an ore singularly free from impurities, while the Sumerians were utilizing one with a definite, even if small, percentage of nickel.

The efforts of Mr Garfitt have been rewarded by receiving a large number of samples of copper ore from Anatolia, Persia, Cyprus and the Sinaitic peninsula, and though all of these were analyzed with great care, not a trace of nickel could be found in any of them. At last, quite recently, Sir Arnold Wilson reported that Mr G. M. Lees, prospecting for the Anglo-Persian Oil Company, had found in Oman some old copper workings at a place known as Jabal al Ma'adan, in Wadi Ahin, inland from Sohar, and had brought back samples of the ore and the slag. The slag contained only a small quantity of copper but no nickel, but the ore, which was only in the form of thin veins, much mixed with other minerals, contained 1.50% of copper and 0.19% of nickel. This, then, seems possibly to have been the site whence the Sumerians, from the time that they first settled at Kish and Ur until their conquest by the Amurru, obtained their supplies of copper.

It has long been known that the early peoples of Mesopotamia obtained copper from Magan or Maganna, which is described in a geographical tablet of Sargon of Agade (2752-2697 B.C.) found at Ashur. The sentence runs thus:—

Dilmun (and) Maganna, countries beyond the Lower Sea
and the countries from the rising to the setting of the sun which
Sargon the . . . king conquered with his hand.¹

A fuller account of this place occurs during the reign of Naram-Sin (2673-2635 B.C.), usually thought to have been his son, though not his immediate successor, for he is said to have conquered, or re-conquered, Magan. It is said that he went to Magan and captured Mannu-dannu, its king. Naram-Sin had a statue of himself made of diorite, which he brought from the mountains of Magan.²

In the time of Gudea, about 2500 B.C., timber was brought from Magan, Melukhkha, Gubin and Dilmun, and diorite from Magan,

¹ A. H. Sayce, 'The Atlas of the Empire of Sargon of Akkad'. *Ancient Egypt*, 1924, p. 2. The text has been published in *Keilschrifttexte aus Assur, verschiedenen Inhalte* (1920), no. 92.

² *Cambridge Ancient History*, 1, 415.

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while in the Sumerian legend of Dilmun, the deity of Magan is called Nindulla, 'queen of the flocks'.³ The ships and copper of Dilmun, Magan and Melukhkha are mentioned together in the lists. In the time of Hammurabi, 2067-2024 B.C., different kinds of dates were brought from Dilmun, Magan and Melukhkha.⁴

Langdon states that Magan was called the mountain of copper, and suggests that this refers to Jebel Akhdar in Oman, where copper is still found.⁵

Now Jabal al Ma'adan,⁶ as far as one can judge, lies only 75 miles, or perhaps even less, north-west of Jebel Akhdar, and almost equidistant between the two is the town or village of Makanyat, the first two syllables of which seem to retain the name of Magan. Whether this be so or not, it seems almost certain that from the earliest times down to the days of the First Babylonian Dynasty the Sumerians obtained their copper, either from Jabal al Ma'adan or Jebel Akhdar, or from some place not far from either and so not far from Makanyat,⁷ and that this district was known to them as Magan.

³ *Cambridge Ancient History*, 1, 416.

⁴ *Ibid.* 544.

⁵ *Ibid.* 416. From an inscription of Gudea.

⁶ Professor Albright informs me that this means 'the mountain of the mines'.

⁷ Professor Langdon tells me that this means 'the camping-ground'.

The Ford of Oxford

by Rev. H. SALTER

IT has often been discussed where the ford was which gave its name to Oxford. As far as is known, it is mentioned in two documents only which are of the Middle Ages, and the second of them is so obscure that it would not be intelligible by itself. The first is a charter, which will soon be printed in the Oseney cartulary, dated 27 June 1352, by which Roger Brekebeke grants to John de Sancta Frideswida a messuage in St. Aldate's, a plot of land in St. Michael's parish, an acre of meadow and a ham: the two last are described in these words '*acra vero prati iacet retro pandoxinam abbathie de Oseney inter pratum domini Ricardi Dammory quod tenet de domino rege ad feodifirmam ex parte australi et pratum quod quondam fuit Ricardi le Spicer ex parte boriali; dicta vero hamma iacet in eodem suburbio inter pratum priorisse et conventus de Stodleghe ex parte boriali et vadum vocatum Oxenforde iuxta pontem ducentem versus Northhengseye ex parte australi*'. (The acre of meadow lies behind the brewery of Oseney Abbey, being bounded on the south by the meadow of the lord, Richard Dammory, which he holds in fee-farm of the king, and on the north by the meadow formerly belonging to Richard le Spicer; the said ham lies in the same suburb, being bounded on the north by the meadow of the prioress and convent of Studley, and on the south by the ford called 'Oxenforde' near the bridge leading towards North Hinksey). The brewery of Oseney was on an island which lay to the west of the abbey and was separated from it by what is now the main stream of the Thames. Behind the brewery, *i.e.* to the west of it, there was a meadow, then known as Bulstake Mead, now Oseney Mead, bounded on the north by what is now the high road, and on the south by the island known as King's Mead, which at that time was held by Richard Dammory together with Northgate Hundred and the manor of Headington. The ham was further to the west and must have been adjacent to the causeway which leads to Hinksey ferry. There is to this day a footbridge over that branch of the river which is called Bulstake, and we gather that the ford was by the side of this bridge just above it; the pedestrians used the bridge, and horses and cattle used the ford. The county boundary



THE APPROACHES TO OXFORD, FROM ROCQUE'S MAP OF BERKSHIRE, 1761

THE FORD OF OXFORD

passed under the bridge, along the bed of Bulstake, but about a hundred yards above the bridge it branched off westward along a watercourse called Shirelake, which came down from the sluice just above Botley Mill.

The other deed has been printed in *Mediaeval Archives of the University of Oxford*, vol. 1, p. 193. In 1376 there was a dispute about the boundary between Oseney and the city; the latter asserted that the whole of Oseney was within the bounds of the city and that in all payments it ought to contribute with the city. There is no doubt that for certain purposes the boundary of Oxford followed the county boundary as far as Godstow, and when Queen Elizabeth visited Oxford, coming from Wytham, she was met by the mayor at Godstow Bridge; but for other purposes the authority of the city ended at the north gate, and it was referred to the bishop of Lincoln how far the authority of the city extended on the west. The city put their *libellus* before the bishop, stating the grounds of their claim; this is lost, but what we have is the reply of the abbot of Oseney, and it is not always easy to discern what he was answering. Towards the end of the document the abbot deals with the mayor's statement that the tannery of Oseney was talliaged with the burgesses of the city; the tannery was adjacent to the brewery, and as it lay to the west of Oseney, this would be an argument that the boundary of the city was to the west of Oseney; the abbot's answer is that talliage was claimed but that the claim of the city was disallowed in the king's court. He proceeds: 'As for the statement of the mayor and commonalty that there is a spot called Oxford, from which spot the town takes its name, (and that) it is parcel of the said city, the abbot replies that it is within the franchise and lordship of Northgate Hundred and not (in the lordship) of the city of Oxford, nor of their franchise'. He then deals with the statement that many burgesses owned land in the meadows which lay to the west of Oseney. His reply need not be quoted, but it may be observed that he speaks of 'the spot called Oxford' after dealing with the tannery of Oseney, and before coming to the meadows. This is where the ford called Oxford would naturally be noticed.

This situation of the original ford is not what we should have expected in some ways. But it must be remembered that there was no approach to Oxford by the Botley road in the Middle Ages. Dr Claymund, about 1540, was the first to build bridges along the Botley road, and they were only the width of one vehicle. When the two coach roads to Faringdon and to Witney were made between 1760 and 1770, new bridges had to be built wide enough for two vehicles.

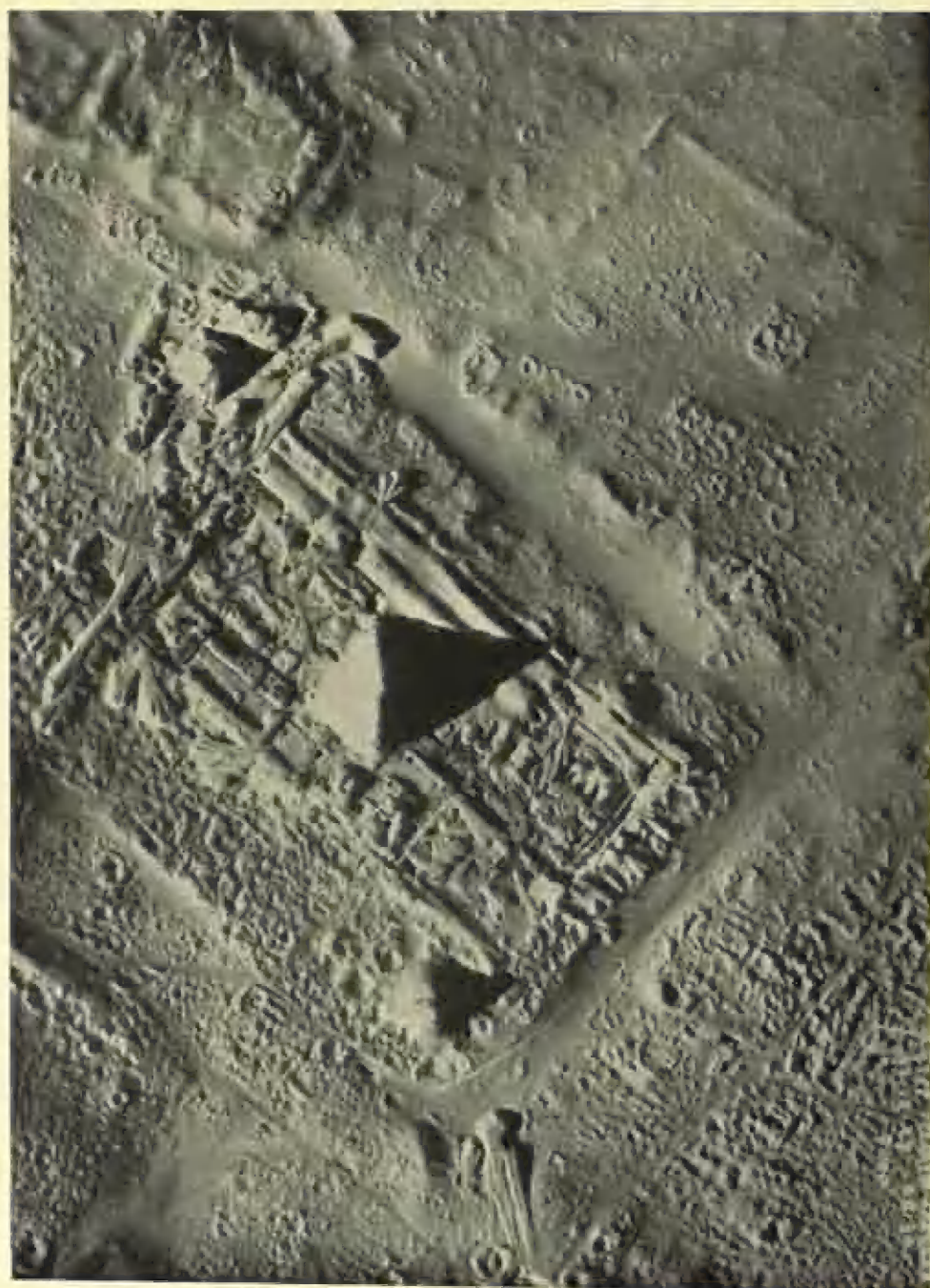
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Rocque's map of Berkshire, made in 1761, shows that there were a few lanes at Botley, but no main roads, and those who wished to reach Oxford from Cumnor would naturally go by Hinksey ferry. The map shows that the way to Oxford from Faringdon and the west was by Boar's Hill and through Grandpont to the south gate; but as Grandpont was made by Robert d'Oilli, the approach to Oxford in Saxon times must have been by the old track which runs up the hill from Hinksey and then divides, one branch leading by Chawley, Cumnor, Bablock Hithe, Stanton Harcourt to Witney, the other by Wootton, Bessilsleigh, Appleton, Fyfield, Longworth, Hinton to Faringdon. When on St. Scholastica's day in 1355 a crowd of villagers burst in at the *west* gate of Oxford with a black flag, crying 'slay, slay', they must have come through Hinksey and over the footbridge at the ford called Oxford.

It may seem that the Britons or Saxons might have chosen a better spot. Four branches of the river have to be crossed by this way:—first the stream where is, and always was, a ferry; then the ford called Oxford; next the ford called Wereford where Oseney built a bridge soon after 1200, and lastly the ford below the Castle mill. But it is not the number of fords nor their length which is to be considered, but rather whether they are deep and muddy. The meadows to the west of Oxford have a gravel subsoil and do not become foundrous, and probably it will be found that this crossing has less drawbacks than other possible crossing. Certainly the river and the meadows a short distance below Hinksey are sticky and the soil is clay.

Lastly, it may be objected that the plan of Oxford with a road running through it north and south, should imply that there was some way of crossing the river where now is Folly bridge. It is a serious point, but not so serious if it is remembered that the road running to the south gate was originally small and insignificant, not like the roads which ran to the north gate and the east gate. The road from Carfax southward was wide only as far as Pembroke street, and it was not for the purpose of traffic but as a market place. At that point it became a road of only 20 or 24 feet in width, until Cardinal Wolsey when he built Christ Church threw the buildings back on both sides, and made a wide road to the south gate. After four hundred years the city is continuing the work of the cardinal, and intends to make a wide road as far as Folly bridge. Originally the approach to south gate was much like the approach to little gate, which led only to the meadows where the Black Friars were ultimately settled.

PLATE I



THE STEP PYRAMID, SAHARA, EGYPT
P. Royal Air Force, Crown Copyright reserved

Notes and News

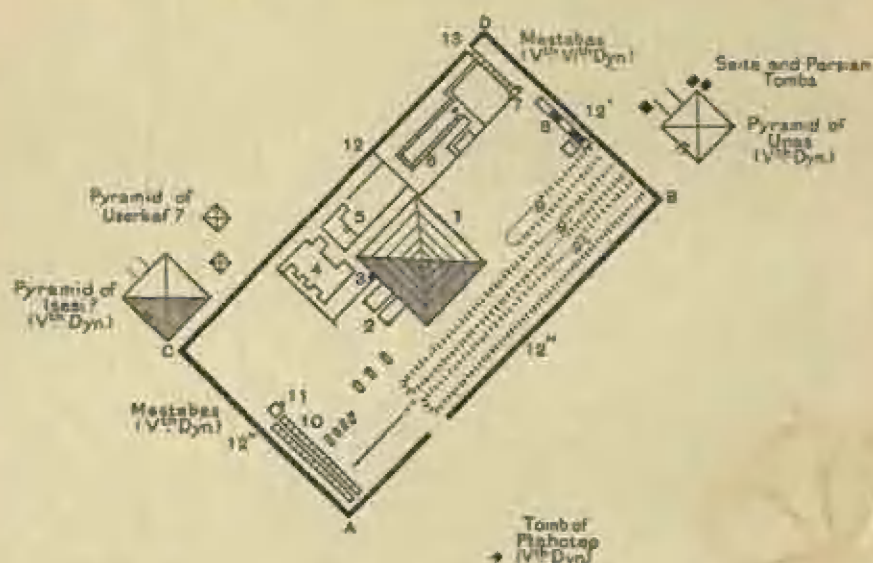
THE STEP PYRAMID, SAQQARA

The accompanying air photograph of the Step Pyramid at Saqqara was taken in the early morning. It clearly shows the excavations carried out by the Department of Antiquities of the Egyptian Government during the last three seasons. The key explains the relative positions and names of the various buildings discovered.

The Step Pyramid was built as the tomb or cenotaph of Pharaoh Zoser (Djeser) of the Third Dynasty. It is built of roughly dressed blocks of local grey-brown limestone cased with fine white limestone from the Mokattam Hills on the other side of the Nile. The casing was in steps. The Pyramid is the oldest surviving building in stone in Egypt. The funerary Temple (2) lies on the north side of the Pyramid. Close to it is the *serdab* or statue chamber (3) in which the seated limestone statue of the king was found in position.

Zoser laid out a great quadrangle or Temenos round his Pyramid to contain the tombs of himself and the two royal daughters, Int-ka-es and Hetep-hernebti. The names of these royal daughters, or possibly queens, and that of the king are the only names on the numerous boundary stelae which marked off the desert area selected by Zoser. The stelae were taken down as the work was completed and were used as building material. Within the enclosure or Temenos A B C D there are only two tombs which are not the king's, and these, 4 and 5 at the north-east corner of the Pyramid, must almost certainly be the tombs of the two royal daughters, but as the tomb chambers had been plundered complete identification is impossible. Besides the funerary temple, the king built another temple of a different type—the Hebset temple (6) to celebrate the completion of 30 years reign. It is a courtyard surrounded by a number of shrines each of which may represent one of the districts of Egypt. A narrow passage connects this temple with the entrance colonnade (7) with its rows of columns once over six metres high. These columns are imitations in stone of the bundles of reeds

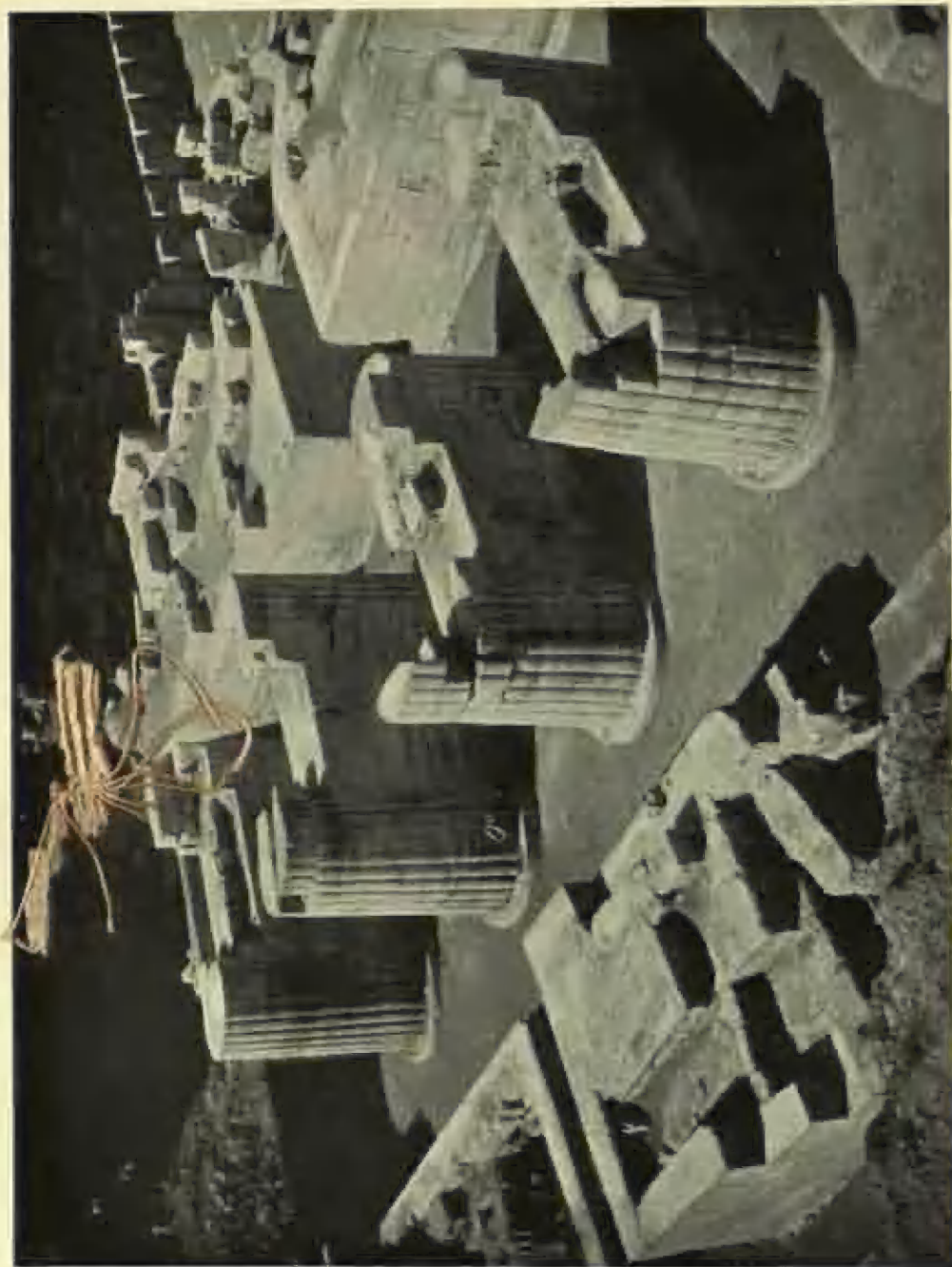
KEY TO AIR-PHOTOGRAPH OF
THE STEP PYRAMID, SAQQARA



- 1 STEP PYRAMID OF ZOSER
- 2 FUNERARY TEMPLE
- 3 STATUE CHAMBER
- 4 TOMB OF INTAKES
- 5 TOMB OF HETEPHERNETI
- 6 HESSED TEMPLE
- 7 COLONNADE
- 8 TOMB OF ZOSER
- 9 SUPERSTRUCTURES OF MAGAZINE
- 10 MAGAZINES
- 11 ALTAR
- 12 TEMPLE WALL
- 13 ENTRANCE

0 100 200 300 400 500 YARDS

PLATE II



FASCICULATED COLUMNS AT WEST END OF COLONNADE, STEP PYRAMID, SAQQARA
Ph. Royal Air Force, Crown Copyright reserved

PLATE III



FLUTED COLUMNS, FACADE OF TOMB-CHAPEL OF INTRALES, STEP PYRAMID, SAQQARA.
PA. Royal Air Force, Crown Copyright Reserved

NOTES AND NEWS

which supported the roof of the primitive Egyptian huts. The other type of column met with is fluted, and imitates either some vegetable form, or reeds split vertically so as to expose the hollow interior. Reeds split in this way and made into bundles with alternate concave and convex layers would form a very compact column, and perhaps the only column possible to builders in a river valley subject to annual inundation, which would destroy all buildings of stone or brick in an age when the four sites had not risen high enough to provide foundations for permanent buildings in more durable materials.

At the south end of the Temenos is a great tomb (8) made for Zoser but apparently not his burial place. Like the Pyramid it contains blue tiled rooms and has reliefs of the king with inscriptions which apparently commemorate his visits to different parts of his kingdom.

On the west side of the Temenos are long mounds of builders' rubbish between retaining walls. These are the superstructures (9) of subterranean magazines which yielded great quantities of broken stone vessels. Another series of magazines (10) run along the inside of the north wall of the Temenos and perhaps furnished offerings for the great altar (11). The contents of these magazines were grain and fruits.

The Temenos wall itself (12) is a great bank of builders' waste from the construction of the Pyramid enclosed between retaining walls of local stone, the whole being cased with fine white limestone and built to imitate the mud brick walls of an archaic fortress or city complete with projecting towers or bastions at intervals, entrances with the closed gates carved in stone and ranges of loopholes. The only entrance (13) is at the east end of the colonnade between larger projecting towers.

The perfection of the masonry makes it difficult to believe that these stone buildings are the oldest surviving in Egypt, but the imitation of brickwork and reed construction follows the law which makes every fresh change in material imitate the forms associated with the material previously in use, a stage which precedes the realization of the constructional properties natural to the new material. This archaic limitation was in two generations left behind by the builders of the great Pyramids of the fourth dynasty, although the Egyptians retained to the end columns in imitation of the lotus and the papyrus derived from the primitive constructions of their remote ancestors.

The buildings uncovered at the Step Pyramid reveal a new and the earliest chapter in the history of Egyptian stone architecture.

C. M. FIRTH.

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THE EVANS COLLECTION

The following notes on this Collection supplement the extracts from the Annual Report of the Visitors of the Ashmolean Museum for 1927 which were printed in the September number of *ANTIQUITY* (vol. II, 351-3) by permission of Mr Thurlow Leeds, Keeper of the Museum.

The Evans Collection includes axes and other implements of stone from Cretan and mainland sites, a notable specimen being a perforated mace-head from Pergamon; bronze weapons from Amorgos, Crete, and the mainland, for the most part of familiar types, among them massive double-axes of the Iron Age. Of special interest are two bronze swords of mid-European form from Graditza, Thessaly, affording a stepping-stone in the southward movement which brought a similar weapon to Mycenae.

WEST EUROPEAN SECTION

' *Bronze Age.* No more is possible than a bare summary of the increase that has accrued to this section from the Honorary Keeper's gift, but even so its value for a comparative study of this period of European archaeology leaps to the eye. Hardly a country but is represented in some measure, and many abundantly so, while the interrelations of various regions are often strikingly illustrated.

' (a) *Italy.* Weapons of almost every class; notably handled daggers of an early type; a socketed axe with part of its original bronze-sheathed handle of the type borne by warriors of the figured *situlae* of the Early Iron Age; a well preserved sword with wooden hilt studded with bronze rivets.

' (b) *Switzerland.* A comprehensive series from the Lake Dwellings; axes, wavy-backed knives, pins, rings, fish-hooks, and a host of other small objects. A remarkable axe from Brigue has its socket at right angles to the blade; on the casting of the socket the method of binding which preceded the invention of the socket is reproduced. It is accompanied by a dagger and bracelet and may be of Iron Age date.

' (c) *Danubian Area.* A small but noteworthy group collected by the donor in this region includes the Makarska hoard with its anvil-hammer and its unusual socketed axes of Syrian type. Other axes with affinities farther north indicate the source of allied specimens and an ingot-axe from Apulia in the Italian series.

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' (d) *Hungary*. An initial period with implements in pure copper passes to the high-water mark, attained at the middle of a long bronze age, here demonstrated by a wide range of axe-types, several fine swords, and the distinctive Hungarian spiral ornaments, to be succeeded by simpler forms which mark a period of stagnation when other parts of Europe had long passed to the use of iron.

' (e) *Germany, Austria, and Czecho-Slovakia*. The southern region bordering the Alps with close affinities to Switzerland and Italy, a central area reaching from the Rhine to Silesia, and the northern plain, close kin to the Scandinavian province, are all well represented, their individuality emphasized by occasional specimens exported from one region to another.

' (f) *Scandinavia*. The vigorous and long-lived Bronze Age of the North is documented by a series sufficiently rich and distinctive to allow of a clear comprehension of its evolution throughout some 1,400 years. A large group of "tutuli", with admirably engraved spirals, two gorgets, and other objects, clearly from one grave, are a feature of the earlier stages, while from the later an example of the exclusively northern "dosen" or looped bowls, torcs, razors, and the like illustrate the changes which Scandinavian culture and ornament underwent as the result of the infiltration of southern (Italian) products and decorative motives. With the bronzes are a few pottery vases from Danish sources.

' A large selection of the Central European, Hungarian, and Scandinavian series has already been placed on exhibition.

' (g) *France*. Implements from almost every part of the country bring out clearly the regional individuality which marks much of the culture of France of this period, and on the routes by which trade passed light is thrown by several rich hoards. One entirely of palstaves from Tours marks one of the points of convergence on the Loire of routes from the northern coasts whither came the magnificent gold torc, doubtless of Irish manufacture, found with late implements at Fresné-la-Mère, in the department of Calvados. Yet another line of traffic southwards is indicated by a second hoard of palstaves from Abbeville, another of broken bronze from the Seine, and, lastly, by a third very striking collection from Dreuil, near Amiens, in which a knife and other objects of Swiss types link on to those foreign elements from the same quarter which reached south-east Britain in the late Bronze Age. Finally, the important route by way of the Garonne to the Mediterranean is marked by a gold torc and gold twisted rings, again probably of Irish fabric, found near Carcassonne.

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' (h) *Spain*. Copper implements, pottery, &c., supplement the collections from El Argar and other south-eastern sites already in the Museum. Halberds and double-looped axes indicate the origin of both types to be found in the British portion of the collections.

' *Iron Age*. Additions to this section comprise one of the outstanding constituents of the Evans Collection, namely, a series of objects from Hallstatt, the eponymous cemetery of the earlier part of this period in Europe. Bronze bowls, shield-bosses, bracelets, gold and bronze ornaments, amber beads, and bronze and iron weapons, among them a huge iron blade in its bronze scabbard, go far to fill a long-felt gap in the prehistoric collections. Their value for study is greatly enhanced by the accompanying gift of a copy of the rare hand-painted album of the results of Ramsauer's excavations from 1847 to 1863, a valuable supplement to von Sacken's *Das Grabfeld von Hallstatt*.

' To the late Hallstatt extension westwards belong two fibulae of Spanish or southern French origin, but with a northern French provenance; to the La Tène period a large series of La Tène I fibulae from Dux, Bohemia; and others of various dates from other sites; torcs with buffer-ends, a bridle-bit, and a bull's-head mount are all typical pieces from Central Europe and France.

' Among Italian antiquities of the period are bronze fibulae, clasps, four finely engraved shield-disks, and a remarkable sword with leaf-shaped iron blade and clumsy horned hilt in bronze, a monstrous reproduction of a late Hallstatt type'.

AN ANCIENT FORD

The beautiful views reproduced on the plates opposite were taken by Miss Mary C. Fair, to whom we are indebted for them. Miss Fair's account in the *Transactions of the Cumberland & Westmorland Archaeological Society* (to appear shortly) gives full details, here abridged.

' The ford was noticed some thirty years ago by my late father and myself when fishing on the river Mite, from Ravenglass (on the west coast of Cumberland). A venerable heron, alluded to locally as "Jammy Hernsew", took up his position evening after evening on what looked like conveniently placed boulders showing through the mud of the river channel at low tide. Observation of this bird and his vantage-point revealed that the "boulders" were not the work of nature but

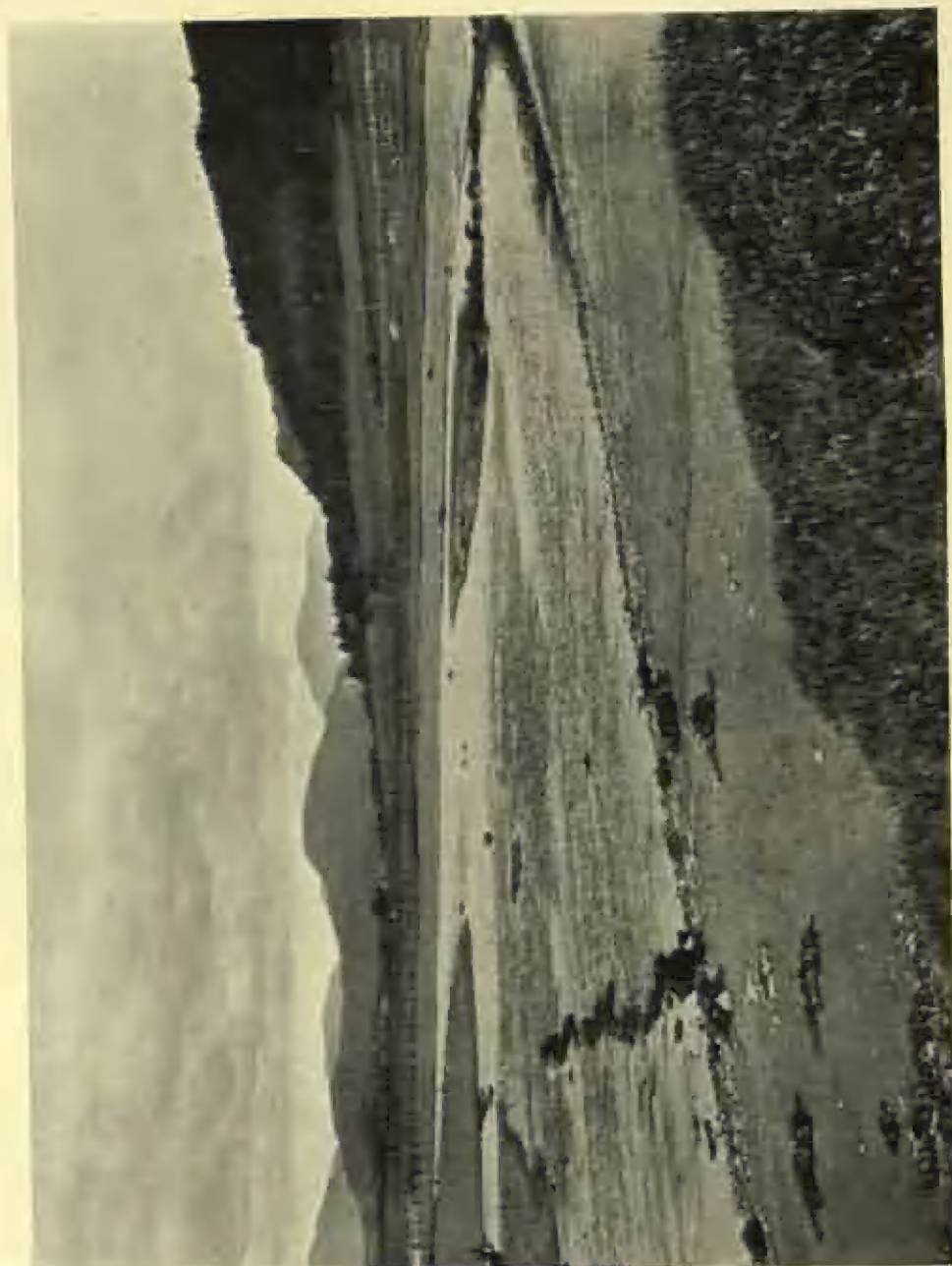
PLATE I



OLD FORD OF RIVER NITE, CUMBERLAND: EAST KEND OF CAUSEWAY

Pr. Miss. M. C. Fair

PLATE II



CH. 14. FORD OF RIVER MITE, CUMBERLAND, LOOKING TOWARDS SEA FELL.

79. Miss M. C. Fox

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the massive kerb-stones of an elaborately constructed causeway forming a ford carrying some long-forgotten highway across the river. My father at the time suggested that this was the ford by which the Roman road passed north from Ravenglass to Moresby, but for a while other matters (including the Great War) intervened, and nothing much was done in the way of examining the possibilities of the place.

'Now rains have descended and floods have scoured the river-channel with such effect that several points of interest have been revealed by the washing away, for a few tides, of the mud concealing the causeway. This reveals it as a massively constructed work enabling the river Mite (whose bed hereabouts is mostly of soft mud) to be crossed with safety and comfort at low tide.

'The ford at the present time seems to have dropped out of local memory, and I have not seen any notice of it in topographical notes or descriptions of the district'.

The whole thing has a decidedly Roman look about it; if so, the tracing of the Roman road which led down to it from either side should be a task of no difficulty and great interest—even of excitement! We commend it to any of our readers who may want an excuse for a walking-tour. Miss Fair, in her article referred to above, has provided indications of the probable course for the first few hundred yards in each direction. The ford falls on sheet 82 NE of the Ordnance Map (6 in. to mile series).

EXCAVATIONS AT ALCHESTER, OXON.

The third season's excavation at Alchester was carried on for 6 weeks during July and August 1928, with very satisfactory results. The chronology of this particularly interesting site is gradually becoming clearer with each successive year. It seems evident that there was an intensive occupation soon after the middle of the 1st century, if not earlier, for the rampart region at least seems honeycombed with small ditches running through the gravel, apparently for drainage purposes (they average about $3\frac{1}{2}$ feet wide and $2\frac{1}{2}$ deep). These ditches (at a low level, about 6 to 10 feet below the surface) contain large quantities of pottery ranging from Claudian to Domitianic. Over them have been built the structures of the 1st stone period, *e.g.*, a house (with lower courses of walls and floors in excellent preservation) of the period Trajan-Hadrian, and the tremendously strong foundations of a tower at the north-east corner of the town. Nothing that the excavation has

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yielded is more surprising than this enormously strong building work, which is certainly not later than the 2nd century. It was found last year in a rampart foundation near the east gate, and between that point and the north-east corner. This year the foundations of the corner tower prove to be of exactly the same strength and style. The small finds include a number of trinkets from the house, *e.g.*, a delicate bone comb, a bronze spiral-knotted swivel chain, a decorated bone knife-handle, one of the long narrow spoons for toilet use, and fragments of several delicate glass cups and pillar-moulded glass bowls. In addition two conical querns have been found, one of Hertfordshire stone, several attractive fibulae (including one of the Aucissa type, inscribed), a considerable amount of Samian ware, and coins ranging from Nerva to late 4th century, with one excellent specimen each of Tetricus and Constantine the Great. In the disturbed surface levels over the house (especially on that side towards the interior of the town), a good deal of late 3rd and 4th century pottery has turned up; thus evidence has again been obtained to prove the continued existence of Alchester practically throughout the Roman occupation.

SAINT COLUMBA

We have received the following letter from Dr W. Douglas Simpson in reference to the review of his book, *The Historical Saint Columba*, in the September number of ANTIQUITY, pp. 372-5:—

SIR,

I have derived great pleasure from Professor Macalister's sprightly and stimulating—and, may I add, thoroughly Irish—review of my book on Saint Columba, published in the last number of ANTIQUITY. In the course of his remarks Professor Macalister sets forth views upon the ethnology of the Picts, and the linguistic content of the Ogham inscriptions in Scotland, upon which I do not feel called on to comment here, as these matters are nowhere dealt with in my book: but I gratefully avail myself of the Editor's courtesy to reply to certain points of fact that are raised.

As to the round tower west of the cathedral at Iona, Professor Macalister does not seem to be aware that the circular building above ground, on the thin walls of which he remarks, is a comparatively modern 'restoration', under the mistaken idea that the structure had been a well; and that the late Dr Macgregor Chalmers, excavating

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underneath it in 1908, found the stump of an unmistakable round tower of quite standard dimensions, 19 feet in diameter over walls 6 feet thick. This stump is correctly planned beneath the 'well' in the official survey recently published by the Iona Trustees.

The question of the Pagan or Christian origin of the Pictish symbols is too large and too controversial to be discussed here ; and in my book (p. 75) I have observed that it does not affect my thesis, which is that, whether Christian or Pagan in their origin, these symbols were at all events capable in their entirety of bearing a Christian meaning. But Professor Macalister is not correct in affirming that 'the art of the superadded crosses is totally different from that of the symbols and the native animal sculpture associated with them'. Some of the incised symbols on the Golspie stone, now at Dunrobin, for example, are decorated with entirely characteristic late Celtic spiral work. Also, stones of the most primitive class, bearing incised symbols without the cross, frequently show similar late Celtic spiral and other ornament. The Dunnichen stone is a conclusive example : its incised symbols, which are not associated with any cross, are 'beautifully ornamented with spirals showing a marked affinity with those of the Pagan Celtic style of the ages of Iron and Bronze'. (*Early Christian Monuments of Scotland*, part 3, p. 207). Other instances might easily be multiplied. Thus Professor Macalister's attempt to differentiate between the art characteristics of the symbols and the crosses is found to be illusory.

In regard to the cormorants on the Lindisfarne Codex, the reader who refers to my book will note that I have deduced no argument from them of the kind which Professor Macalister sets himself to refute : all I have done is to invite attention to an interesting and suggestive fact. The thesis that the manuscript was written at St. Cuthbert's monastery, as Aldred's colophon indicates, has been developed by Professor Baldwin Brown—in opposition to Professor Macalister's contention that the manuscript is Irish—from arguments far more cogent than the presence of cormorants at Lindisfarne.

Lastly, may I be allowed to disclaim the charge of iconoclasm—if indeed this be a crime. I entertain no prejudice for or against Columba: I have merely sought to depict him as I think he was. And in showing him forth as a living and passionate actor on the troubled stage of his life and environment, instead of the conventional, cut-to-pattern saint of current accounts, I conceive that I have revealed him in every particular as a greater, more intelligible, and infinitely more attractive figure in early Scottish history.

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ANCIENT BRITISH BURIALS, NORTHUMBERLAND

An interesting burial mound has been excavated recently by Messrs R. C. and W. P. Hedley at Pike Hill, near Stamfordham, Northumberland. The mound, which has been much denuded by cultivation and weathering, was about 36 feet by 33 feet and 18 inches above the original surface. It consisted almost entirely of earth. In the centre of the mound there was a primary burial by inhumation made in an irregular oval excavation in the underlying shale. This excavation was about 3 feet deep, with sides somewhat steeply inclined inwards. It was lined by flat stones set edge upwards against the shale; on these stones was placed a massive sandstone cover. The cist was 2 feet 9 inches long by 2 feet wide and 12 inches deep, with an orientation on the longer axis of NE by E. Water was standing to a depth of several inches in the cist and no remains whatever of the burial were left. About 2 feet south-west of the primary burial and with its floor resting upon the undisturbed shale, was found a second cist 2 feet 10 inches by 2 feet by 17 inches. The floor of the cist was roughly paved with small stones. The orientation is nearly due E and W. On the centre of the inner face of the south side stone is a fine symmetrical 'pit' marking about $1\frac{1}{2}$ inches in diameter and $\frac{3}{4}$ inches in depth, quite distinctly and sharply cut. Three feet from this second cist and overlying the primary burial was a rough unshaped sandstone slab with a fine and unusual series of 'cup' markings upon it. The stone is 24 inches by 21 inches and 5 inches thick. It would appear that this stone was one of two or more cover-stones of the second cist.

Several instances of these 'cup and ring' markings have been found in direct association with burials; and at Old Bewick, Routin Lynn, Doddington and Lordenshaws are particularly fine series of similar rock-markings in intimate association with important earthworks.

An illustration of the Pike Hill 'cup-marked' stone is given. The stone is in the possession of Mr E. F. Riddell-Blount, of Cheeseburn Grange, who is proprietor of the site.

R. CECIL HEDLEY.

DOLMENS OF CENTRAL FRANCE

In an interesting communication sent to us on the subject of moving heavy stones, which was discussed in the correspondence printed in *ANTIQUITY*, II, 347-50, Lieutenant R. D. Martin, R.E., gives the results of practical experience in moving a block of stone weighing about 18 tons.

'The stone was an obelisk, about 24 feet long, the butt being 4 feet



CUP-MARKED STONE, PIKE HILL, NORTHUMBERLAND

facing p. 470

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square and the tip just under 3 feet square. It had to be moved over some 300-400 yards of fairly level ground, though with a few rises and falls, the worst gradient being about 1 in 15. Railway sleepers, hard wood rollers about 5 inches in diameter, wooden levers, and some 3-inch rope were used, together with a few iron crowbars which were really hardly required. About 50 or 60 men were employed, of whom one-third were used for moving the sleepers and rollers. There were never more than 40 men actually pulling ropes or using levers. The time taken to move the stone from its position to the metalled road, where other methods of transport were possible, was about two days and a half.

‘ With regard to splintering, my experience was that placed about 2 feet apart (not 6 feet as calculated by Mr Clarke) the rollers did splinter, but not sufficiently to interfere with the work ; a dozen or two were destroyed in all.

‘ It will be noted that the butt end of the stone was as thick as the largest dolmen and thicker than most of them.

‘ In view of this experience I think that 300 men, of whom 200 only would be engaged in pulling, could transport the largest stone of those mentioned by Admiral Somerville, *i.e.*, that weighing 86 tons, provided they had the means used by me. One would imagine that the neolithic engineer would be able to get timber up to 6 inches diameter (I understand ‘Woodhenge’ is neolithic) which he could use for runway, rollers and levers, and that he would also have good hide ropes (which would surely stand a strain of 5 cwt.) ; with this I estimate that he would not require more than 500 men to transport the stone.

‘ Mr E. H. Stone’s figures quoted by Admiral Somerville may be taken as correct but they are misapplied lower on the page (350) ; in discussing the lever Admiral Somerville neglects the mechanical advantage gained by that device, and in dealing with the pull on ropes he assumes that the frictional resistance is equal to the weight of stone—these fallacies do not require comment.

‘ It is not necessary that the stone shall be *lifted* to place it on the rollers ; the earth under it could be removed little by little and the rollers inserted. With regard to lifting the capsills an earthen ramp, if given a year to consolidate, would be firm enough ground from which to pull them into position.

‘ The mystery with which Admiral Somerville surrounds the problem is thus to my mind dispelled, though I do not make light of the difficulties involved. The slow and tedious preparation required, the

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making of hide ropes, the ingenuity shown in the use of levers and rollers and building of ramps, combine to fill me with admiration for the work of my predecessor the neolithic engineer'.

WOOD FRAGMENTS FROM A LAKE SETTLEMENT AT AUVERNIER, SWITZERLAND

Having had the opportunity to examine and make microscopic sections of some few of the wood fragments excavated at Neuchatel by Mons. Vouga, I am glad to be able to present the following report.

The specimens submitted to me for investigation represent three common European woods, namely:—COMMON OAK (*Quercus sp.*), SILVER BIRCH (*Betula sp.*), SILVER FIR (*Abies sp.*). All fragments received were identified as being one or other of these, which is in no way surprising.

Of this batch of samples, the oak wood was mostly in the form of much (laterally) compressed chips, apparently broken from a log, or pile, of decent size. The specimen of fir consisted of a portion of a small branch, so it seemed, which may, or may not, have formed a part of the structure of a lake dwelling. Together with these remains there was also a piece of birch bark.

The fact that the fragments of oak have been laterally compressed to one-quarter, or even one-eighth, of their original thickness is of interest, since it seems to indicate that a very great pressure might at some time have been exerted upon this material. I am not in a position to say exactly what force would be needed to crush normal oak wood to such an extent, but it would undoubtedly be of a very high order—greater, I should say, than could ordinarily be exerted by a few feet of superincumbent silt, or even the weight of the original dwellings.

Now the approximate density of one of these oak fragments is 48 lb./cu.ft., being decidedly high compared with a normal value for European oak of similar growth of, say, 42 lb./cu.ft. Actually, however, an examination of the microscopic structure shows that the wood has been compressed to about one-seventh of its original volume, so that one might expect it to have a density of some 294 lb./cu.ft., or about two-thirds that of iron. But this is not the case. Clearly, then, since the wood has been so much crushed, yet still retains almost a normal density, a great deal of internal decay, or solution, must have taken place before such compression occurred. And in this way, one can readily understand how these oak fragments came to be considerably crushed by relatively inconsiderable forces.

PLATE I



FIG. 1. Transverse section ($\times 15$) of Oak wood from one of the piles, much compressed laterally

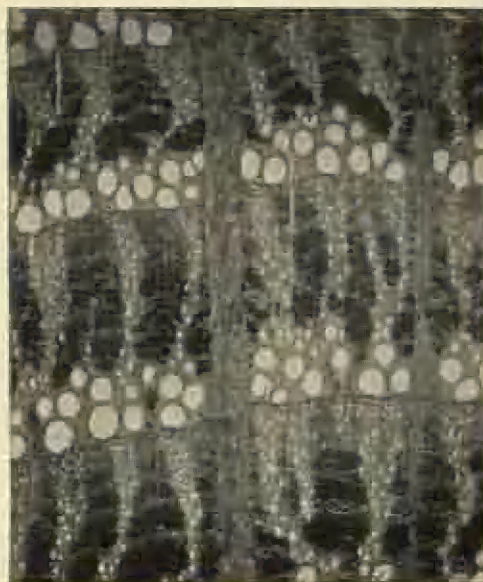


FIG. 2. Transverse section of normal, non-compressed Oak ($\times 15$); compare with fig. 1



FIG. 3. Oak wood, as in fig. 1, only less compressed. Fragment from near centre of tree

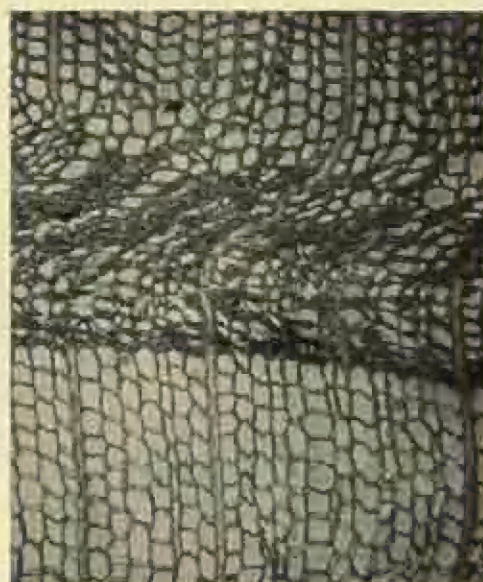


FIG. 4. Transverse section of a part of the small branch of Fir ($\times 60$), to show a line of failure, under stress, along margin of growth-ring

NOTE.—Figs. 1-6 represent views of the anatomical structure of the woods as seen with the aid of a low power of a compound microscope

PLATE II



FIG. 5. Transverse section of Silver Fir ($\times 15$ linear), as in fig. 4, showing two growth-rings.

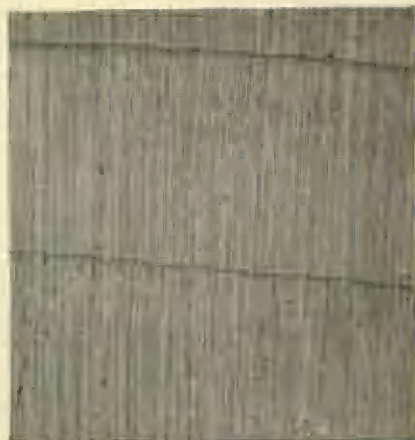


FIG. 6. Transverse section of normal wood of *Abies*, the Silver Fir: compare with excavated wood, fig. 5.



FIG. 7. Photo of the piece of Silver Fir (natural size).



FIG. 8. Photo of fragments of excavated (bottom) and fresh (top) bark from Silver Birch (natural size).

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The sample of Silver Fir also exhibits some internal failure, but this is most reasonably attributed to the stresses and strains set up within the heterogeneous substance of the wood itself, subsequent to excavation during the process of drying and shrinkage.

These various features are roughly demonstrated by the accompanying illustrations.

J. CECIL MABY, B.Sc., A.R.C.S., F.R.A.S.

Research Assistant, Department of Wood Structure,
Forest Products Research Laboratory, Princes Risborough.

A REPUTED LAKE DWELLING SITE NEAR TREGARON

During the summer of 1928 a shepherd discovered a number of piles in a peat bog approximately 1450 feet above sea level, about 10-11 miles east of Tregaron, Cardiganshire, $\frac{1}{2}$ mile from the source of the river Tywi, on the Cardiganshire side of the Brecknockshire-Cardiganshire border. The find was reported to Mr Jenkin Lloyd, Pant Tregaron, who, with Mr Ernest Davies, Velindre, Lampeter, provided much of the following information.

The peat bog is a depression 180 yards long, and 120 yards wide, the peat being from 3 to 10 feet deep. Beneath the peat is a whitish clay which contains traces of charcoal (probably natural). In the peat, at intervals of about 4 yards apart, in a straight line, are ten piles, of an average length of 2 feet, all roughly pointed.

Mr H. A. Hyde, Keeper of Botany in the National Museum of Wales, has examined a fragment from the pile now in Mr Lloyd's possession and reports:—

'Externally the specimen resembled in colour a recently cut piece of oak but it was abnormally light in weight and easily broken. On cutting sections for microscopic examination, I found that the wood was quite abnormally soft, and easy to cut with a razor. Transverse and longitudinal sections were examined. The specimen was found to be one of oak (*Quercus robur*). The presence of cellular infillings [tyloses] in the larger vessels indicated that the wood was heartwood. Signs of degeneration were observed in the walls of the fibre, but no fungal hyphae were seen. The results point to the specimen having undergone degeneration under unusual conditions, but I am unable to suggest the nature of those conditions: at all events, they differed from those under which Bog Oak is formed, and the material differs similarly from the oak posts from Caerleon'.

IORWERTH C. PEATE.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

The season in Iraq will be one of great activity. Mr C. L. Woolley resumes his great work at Ur of the Chaldees. The Weld-Blundell (Oxford) Field Museum Expedition, of which Dr S. H. Langdon is Director, will be at Kish. M. Louis Watelin is in charge of the Expedition, which will concentrate on the brick tomb cemetery discovered last year in the lowest stratum, 45-50 feet below mound level, in the temple mound beside the tower of Hursagkalamma. In addition to these the following Expeditions will be at work :—

The joint expedition of Harvard University and the American School of Oriental Research under the charge of Professor Chiera, at Tarkalan, near Kirkuk ;

Professor Waterman, of the University of Michigan, will be at Tel-Omar, near Ctesiphon, where he hopes to find the lost town of Opis ;

The Deutsche Orient-Gesellschaft proposes to excavate at Ctesiphon and Seleucia, on both sides of the Tigris, under the direction of Dr Oscar Reuthen ;

The Notgemeinschaft der Deutschen Wissenschaft is sending Dr Julius Jordan to Warka, the Erech of Genesis, which is north of Ur ;

Mon. Père Legrain will be at Tel-O on behalf of the Louvre, Paris, which is assisted by the University of Pennsylvania ;

Dr R. Campbell Thompson hopes to continue his work at Nineveh.



The Egypt Exploration Society will this season excavate the site of Armant (Erment), near Luxor, and particularly the cemetery of the sacred Bulls of Hermonthis, discovered by Mr Robert Mond and Mr W. B. Emery. Mr Mond has withdrawn his claim on this concession in favour of the Society. Dr H. Frankfort will be in charge. Dr H. R. Hall describes the site in the *Daily Telegraph* of 1 October.

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The Italian Archaeological Mission to Albania, with Dr Luigi Ugolini as Director, has been working at Butrinto, on Lake Vivari, within sight of Corfu. Dr Ugolini reports that he has made some interesting discoveries which illustrate the successive civilizations which occupied the town. Extensive remains of the city walls, built by the Greeks in the fifth century B.C., have been found. Under the wall of a building of considerable size—possibly baths—were some fine statues of Greek workmanship, particularly one of a woman, draped, which Dr Ugolini thinks may be attributed to Praxiteles. Of the Byzantine period the most important discovery is a baptistery of fifth century A.D. The roof was supported by granite columns, taken from Roman buildings. The marble font is made in the shape of a Greek cross and is in the centre of a well-preserved mosaic pavement. (*The Times*, 15 October, p. 15, with illustrations).



Some remarkable examples of prehistoric pottery have been discovered in the province of Coclé, Panama, by Mr A. Hyatt Verrill, who has been excavating there for the past few years. Illustrations, in colour, are published in the *London News*, 13 October, accompanied by an article by Mr Verrill on other finds which he made on the site of a temple-like structure situated on a plain between Rio Caño and the Rio Grande.



The results of the season's work at Caerleon have been important. It is now established that the date of the fortress is 75 A.D., some 25 years later than hitherto thought. The defences are shown to have been a V-shaped ditch 25 feet wide by 8 feet deep, and a clay bank 20 feet wide by 8 feet high faced with a heavy timber palisade. Probably about 100 A.D. the outer face of the clay bank was strengthened with an embattled stone wall 5 feet thick. The wall was pierced by four symmetrical gateways and had an elaborate system of look-out turrets situated at regular intervals of 50 yards. A metalled roadway which skirted the base of the ramparts within has been proved in section to have been no less than 3 feet in thickness. Among the finds are a large marble slab with a dedicatory inscription of the Emperor Trajan, 100 A.D., and a fine length of Roman lead piping. (*The Times*, 26 September, p. 12).

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The excavation of the Roman fort of Kanovium, near Conway, North Wales, has been continued this summer under the direction of Mr P. K. Baillie Reynolds. So far as the interior area is concerned the work is completed. In the *Praetorium* a series of post-holes was uncovered, outlining in part the timber buildings of the first century. The buildings appear for a time to have incorporated a stone-built *sacellum*. Evidence of coins and other finds confirms the conclusions formed from past seasons' work that the stone buildings which succeeded the timber constructions are early second century. Some interesting details are printed in *The Times*, 15 October (p. 10).



A quantity of cylindrical jet beads have been found in a Bronze Age burial ground at Poltalloch, Argyllshire. At the bottom of a grave near the same site an ornamented food-urn of baked clay was found. (*Glasgow Herald*, 27 September).



The foundation walls of a Roman Villa have been found at Hales, near Market Drayton in Staffordshire, the only Villa hitherto discovered in the northern part of the county. It is suggested that the site may be that of the military station of Mediolanum. (*The Times*, 24 September, p. 9).



An earthwork and a group of buildings on the well-known Roman site in Lydney Park, Gloucestershire, are being excavated by permission of Lord Bledisloe, under the auspices of the Society of Antiquaries of London, represented by Dr R. E. Mortimer Wheeler. The buildings occupied half the area of a camp or 'promontory fort' and beneath the roadway of the main entrance pottery and other objects of late Iron Age have been found. A report of the work done this season is printed in *The Times*, 21 September (p. 11).



Investigations undertaken by Mr R. F. Parry in Gough's Cave at Cheddar (Somerset), have resulted in some interesting finds of human and animal remains, implements, and tools. The floor of limestone blocks, pebbles, and red cave earth was stripped off in 6-inch layers and the exact stratigraphical relation of every one of the multitude of objects

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was ascertained. Mr Parry informs us that layers 1 to 5 consisted of red cave earth; layer 6 showed a slight mixture of sand which increased with the depth to layer 16 and had a banded appearance in section; layers 17 to 23 were composed of a bed of gravel with water-worn limestone pebbles mixed with cave earth and sand; layer 24 was clay, and at depths of 12 feet to 12 feet 6 inches rock bottom was reached. A report on the various finds was communicated to *The Times*, 6 August, by Professor J. A. Davies, and a complete account will be published in the Proceedings of the Somerset Archaeological Society.



The work which has been pursued at Meare Lake village, near Glastonbury, for so many years by the Somerset Archaeological Society under the direction of Dr A. Bulleid and Mr St. George Gray was resumed during September. Particular attention was given to the structural remains of the dwelling mounds. One site proved to be a weaving establishment, and here 17 combs and over 20 spindle-whorls were found; the former, when compared with the considerable number already recovered from the village, include new types. On Meare Heath has been found a perfect Iron Age sword-scabbard of bronze, 30½ inches in length, engraved with typical La Tène ornament. (*The Times*, 4 September, p. 10; 11 September, p. 12; 18 September, p. 11).



Excavations have been continued at the prehistoric village of Skara Brae, on the southern shore of the Bay of Skail, in the parish of Sandwick, Orkney. On the invitation of H.M. Office of Works the Society of Antiquaries of Scotland asked Professor V. Gordon Childe to cooperate with the Office. Very interesting results are recorded by Professor Childe, with a plan of the village, in a letter to *The Times*, 3 September (p. 8), and an illustrated description of the site was published in the *London News*, 18 September. A full report will be made to the Society of Antiquaries of Scotland.



A report on the result of work at the Roman Villa at Otford, Kent, was communicated to *The Times*, 23 August (p. 8).

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Professor Garstang has issued his first report on the Expedition organized by Sir Charles Marston for exploring the site of Hazor, the capital of the Canaanite kingdom of Jabin, which is situated four miles south-west of Lake Merom. (*The Times*, 3 October, p. 13).

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Mr H. L. Bradfer-Lawrence, F.S.A., informs us that the position of the medieval encaustic tile factory at Bawsey, in Norfolk, has been re-discovered, and the site of one of the kilns excavated. Large quantities of broken and damaged tiles were unearthed together with a number of perfect specimens highly glazed. The designs on the tiles fall mainly into four groups:—heraldic, geometrical, inscribed, and figures of animals, birds and flowers. They are similar to those which have been found from time to time on the monastic and ecclesiastical sites in the neighbourhood.

o o o

Mr S. E. Winbolt reports (*The Times*, 13 October, p. 9) on the excavation of a mound and exterior fosse, near Rudgwick, in Surrey, of which the character is nowhere recorded. On the 25-inch Ordnance Map of 1895 it is marked as a 'tumulus'. Cross-trenches were dug without finding any evidence of a burial mound and from his observations Mr Winbolt concludes that it is almost certainly an early Norman castle mound of which all knowledge has been lost.

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The North of England Excavation Committee of the Society of Antiquaries of Newcastle upon Tyne engaged in tracing the line of the Roman Wall have located a mile castle at East Walbottle, on the Newcastle-Carlisle road, seven miles west of Newcastle. It is of the normal type, 50 feet wide and about 60 feet long. The walls of the castle are 10 feet thick, which corresponds to the thickness of the Wall to the immediate west of Newcastle. It contains a complete internal building about 14 feet wide, with interior walls 3 feet high still standing, and stratified Roman débris which will be examined in due course. There were two types of mile castle on the Roman Wall, one containing 500 square yards, of which there are three known in Cumberland, and a smaller type containing about 330 square yards. (*The Times*, 27 October 1928, p. 9).

Some Recent Articles

This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of ANTIQUITY.

Classification and nomenclature of Beads and Pendants, by Horace C. Beck. *Archaeologia* (1928) LXXVII, 1-76, 85 figs.

A La Tène 1 brooch from Wales : with notes on the typology and distribution of these brooches in Britain, by Cyril Fox. *Archaeologia Cambrensis* (1927) LXXXII, 67-112, 29 figs.

Archaeological and topographical research in and near Rome, 1908-1928, by Thomas Ashby. *Quarterly Review*, October 1928 (no. 498), pp. 281-96.

A valuable survey, which is to be completed in a second article.

An archaeological tour above the Waziristan border, by Sir Aurel Stein. *Geographical Journal* (April 1928) LXXI, 377-80.

Contains notes on early ' painted pottery ' sites discovered.

Las pinturas rupestres de los alrededores de Tormón (Teruel), by Hugo Obermaier and Henri Breuil. *Boletín de la Real Academia de la Historia*. [No details given on the author's reprint].

Reconnaissance aérienne au Ledja et au Safa (Mai 1927), par P. A. Poidebard. *Syria* (1928) IX, 114-23.

A preliminary report, illustrated by 6 air-photographs—3 vertical and 3 oblique. The region lies south of Damascus, between that place and The Hauran. Father Poidebard discovered numerous entirely new Roman sites and roads, which are plainly recorded on the published air-photographs.

L'Antiquité de l'homme dans l'Amerique du nord, par E. B. Renaud. *L'Anthropologie* (April 1928) XXXVIII, 23-49, with bibliography.

Sumerians, Semites and the origin of Copper-working, by H. Frankfort. *Antiquaries Journal* (April 1928) VIII, 217-35.

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Excavations at Ur, 1927-8. By C. Leonard Woolley. *Antiquaries Journal* (October 1928) VIII, 415-48.

A very full description of the contents of the graves, illustrated by 18 plates.

Les provinces culturelles finnoises de l'âge récent de fer dans la Russie du nord, par A. M. Tallgren. *Eurasia Septentrionalis Asiatica* (1928) III, 3-24, sketch-map.

ENGLAND

Early Chessmen of Whale's bone excavated in Dorset, by O. M. Dalton. *Archaeologia* (1928) LXXVII, 77-86, plates v-vi.

A 'Romano-Celtic' temple near Harlow, Essex; and a note on the type, by R. E. M. Wheeler. *Antiquaries Journal* (July 1928) VIII, 300-26.

Full comparative notes on other examples in this country and abroad, with plans, bibliographical list and distribution-map.

Deerhurst [Gloucestershire] Priory Church: including the result of the excavations conducted during 1926, by W. H. Knowles. *Archaeologia* (1927) LXXVII, 141-64, 19 figs., 1 plate.

Also printed in *Trans. Bristol and Gloucestershire Arch. Soc.*, xlix, 221-58.

The Roman villas of the Isle of Wight, by C. A. Sherwin. *Proc. of the Isle of Wight Nat. Hist. Society* for 1926 (vol. 1, part 7) pp. 425-35. (To be obtained from the Hon. Secretary, Wolverton, The Mall, Newport, I. of W.).

An excellent account of general interest, based on facts and written for the general reader. Contains a list of all the known villas, with some account of the sort of people who lived in them and their manner of living.

Flint arrowheads of the Isle of Wight, by Hubert F. Poole. *Ib. id.* pp. 436-43, illustrated.

Reculver: its Saxon Church and Cross, by C. R. Peers. *Archaeologia* (1927) LXXVII, 241-56, 9 figs., 3 plates.

St. Augustine's Abbey Church, Canterbury, before the Norman Conquest, by C. R. Peers and A. W. Clapham. *Ib. id.* pp. 201-18, 5 figs., 8 plates and suggested plan of the reconstructed church of Abbot Wulfric.

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The carved stones at Breedon on the Hill, Leicestershire, and their position in the history of English art, by A. W. Clapham. *Archaeologia* (1927) LXXVII, 219-40, 2 figs., 11 plates.

Notes on prehistoric pottery and a bronze pin from Ross Links, Northumberland, by Parker Brewis. *Archaeologia Aeliana* (1928) ser. 4, v, 13-25, 3 figs., 10 plates.

Bronze age burial at Kyloe, Northumberland, by Parker Brewis. *Ib. id.* pp. 26-9, 2 pls.

Charcoal, a food-vessel, and a jet necklace were found in the cist.

Excavations at Benwell (*Condercum*). Second interim report (1927 and 1928), by James A. Petch. *Ib. id.* pp. 46-74, 10 figs., plan.

The first report is printed in vol. iv, 135-92.

Margidunum, by Felix Oswald. *Trans. Thoroton Society* (1927) xxxi, 54-84, 5 plates and plan.

Dug-out canoes from Shropshire, by Lily F. Chitty. *Trans. Shropshire Archaeological and Nat. Hist. Society* (1927) ser. 4, xi, 113-33, 3 plates.

Ellesmere (1864), Bagley (1872), Knockin (before 1890), Marton (1908). With short note on dug-outs found in Cheshire and one from Oakley Park, Staffordshire.

Uncommon types of stone implements found in Sussex, by Eliot Curwen. *Sussex Arch. Colls.* (1928) LXIX, 77-91.

Full comparative notes on similar types elsewhere.

The antiquities of Windover Hill [Sussex], by E. Cecil Curwen. *Ib. id.* pp. 93-101.

Topographical notes illustrated by an air-photograph; two long barrows, one of them being revealed as such for the first time; flint-mines; old roads; the chalk figure called the Long Man of Wilmington; Celtic fields covering older 'Hallstatt' pits.

Maiden Castle in Stainmore, by R. G. Collingwood. *Trans. Cumberland and Westmorland Ant. and Arch. Society* (1927) N.S. XXVII, pp. 170-77.

Pre-Roman remains at Scarborough, by Reginald A. Smith. *Archaeologia* (1927) LXXVII, 179-200, 58 figs., 2 plates.

Much 'finger-tip' pottery.

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Recent archaeological research in Scotland, by J. Graham Callander. *Archaeologia* (1927) LXXVII, 87-110, 12 figs., 4 plates.

A stone cist and its contents found at Pickie farm, near Boarhills, Fife, by David Waterston. *Proc. Soc. Antiquaries of Scotland* (1926-7) LXI, 30-44, 10 figs.

Crosses and rock sculptures recently discovered in Wigtownshire, by R. S. G. Anderson. *Ib. id.* pp. 115-22, 7 figs.

Rock sculptures at Drummoral, Isle of Whithorn.

Underground galleried building at Rennibister, Orkney, by Hugh Marwick. *Ib. id.* pp. 296-301, 2 figs.

On the bones from graves at Ackergill, Caithness, and an underground building at Rennibister, Orkney. By Thomas H. Bryce. *Ib. id.* pp. 301-17, 3 figs.

Mr Arthur J. H. Edwards' paper on the excavation of the graves is noticed in *ANTIQUITY*, II, 384.

A collection of Tardenoisian implements from Berwickshire, by J. Graham Callander. *Ib. id.* pp. 318-27, 7 figs.

The first comprehensive collection of Scottish microlithic implements, of pre-Neolithic times, received by the National Museum of Antiquities of Scotland. Found on the farm of Dryburgh Mains, Mertoun.

WALES

Gerald of Wales, by F. M. Powicke. *Bulletin of the John Rylands Library, Manchester* (July 1928) XII, 389-410.

Capel Garmon chambered Long Cairn, by W. J. Hemp. *Archaeologia Cambrensis* (1927) LXXXII, 1-43, 19 figs., plan and section.

The cairn is in the chapelry of Capel Garmon and the parish of Llanrwst.

A settlement of the early Iron Age (La Tène I sub-period) on Merthyr Mawr warren, Glamorgan, by Cyril Fox. *Ib. id.* pp. 44-66, 8 figs., plan and section.

Further excavations at the Graig Lwyd neolithic stone axe factory, Penmaenmawr, by H. G. O. Kendall. *Ib. id.* pp. 141-6, map.

Supplementary to the paper by Mr S. Hazzledine Warren in vol. LXXVII, 1-32.

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Offa's Dyke : a field survey. Second report : Offa's Dyke from Coed Talwrn (Treuddyn parish), Flintshire, to Plas Power park (Bersham parish), Denbighshire, by Cyril Fox. *Archaeologia Cambrensis* (1927) LXXXII, pp. 232-68, 16 figs.

The first report, on the course of the Dyke in north Flint, is in vol. LXXXI, 133-79.

Excavations on the site of the Roman fort at Caerhun : second interim report, 1927, by P. K. Baillie Reynolds. *Ib. id.* pp. 292-32, 15 figs., and plan.

Excavations of the Powysland Club at the Forden Gaer, by F. N. Pryce and T. Davies Pryce. *Ib. id.* pp. 333-54, 8 figs., and section.

Work at Forden Gaer has been continued this year—a short report is printed in *The Times*, 30 August, p. 14.

Reviews

PALMYRENA. By ALOIS MUSIL. American Geographical Society, Oriental Exploration and Studies, no. 4. New York. 1928.

Musil's new volume gives the results of journeys made in 1908, 1912 and 1915 through the desert country north-east of Damascus. Two-thirds of the book are taken up with the actual account of his travels, the rest is appendices dealing with the geography and history of the Roman and Moslem periods.

As in previous volumes the first part would have been improved by compression; as it stands it is little more than a transcript of the traveller's diary, sometimes made irksome by the retention of details which while invaluable for map construction etc., are of small interest in themselves; in this case the editing might have been even more severe, because since Musil started on his expedition in 1908 much of the country he traversed has become comparatively familiar ground and his records have no longer the value of novelty. It is hardly fair to disparage, as a recent critic has done, what aims at being a simple and straightforward scientific account because it lacks the romantic flavour of Doughty or Lawrence, but it is true that he covers in part a field which more vivid writers have already made their own and some of his descriptive passages might have been omitted without losing any of the scientific material with which the book abounds.

The appendices are mines of valuable information well presented. In his account of Ar-Resāfa Musil, as is his tendency throughout, makes too little use of the work of his predecessors; Professor Mendl's reconstruction of the buildings is necessarily based on Musil's notes and views, but one would have welcomed more discussion where the latter differ from those of Guyer and Herzfeld, admirable as the drawings are. In dealing with the geography of Roman Syria Musil contends that Ptolemy's Chalybonitis lay neither round Halbūn, 16 kilometres north-west of Damascus, nor in the Aleppo district, where other commentators have variously placed it, but north-east of Hama, where are the ruins of Helbān which he identifies with Chalybon. There is a good deal to commend this theory but it is not proved. As regards the northern site (where, *pace* Muller, the vine grows freely, as it did in Chalybonitis) one fact is worth noting. Streck would derive Chalybon from Halmān, the old native name of Beroea, and Musil argues that the native name of Beroea (Aleppo) was Chalab, and that the form Halmān is found only in Egyptian and Assyrian sources and as a foreign form would not have persisted for six hundred years after the downfall of the Assyro-Babylonian rule. North-east of Aleppo, where the Baghdad railway crosses the Sajūr, there is a district known as Hulmen and marked by the presence of two very large *tells* on the river bank; this may well be the site of the Halmān of the Egyptian records, and if so one of Musil's arguments falls to the ground, while it might be urged further that the Sajūr district would accord better with the fact that Chalybonitis extended to the Euphrates: but a final solution of the problem must depend on the identification of the other towns mentioned by Ptolemy as lying in the area.

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While it is neither the first word nor the last on the wide subject with which it deals, Musil's work is a most valuable contribution to our knowledge of the topography and history of ancient Syria written by one who enjoyed unrivalled opportunities and has taken full advantage of them.

C. L. WOOLLEY.

THE AGE OF THE GODS: a Study in the Origins of Culture in prehistoric Europe and the Ancient East. By CHRISTOPHER DAWSON. John Murray. 1928. pp. 466, 3 plates. 18s.

The compilation of an archaeological monograph or handbook involves such an intensive absorption in technical literature and such a concentration on abstractions, that fruitful or illuminating interpretation is virtually impossible; for that demands not only a concrete imagination but also an acquaintance with the conclusions of cognate disciplines that are likewise buried in technical works. As the author of a dull compilation and specialist essays, I have always hoped that someone with more ample leisure and a wider vision would reassemble the dry bones served up by myself and others and, with the aid of kindred sciences, reanimate the frame of prehistoric humanity. The book before us is the most comprehensive, most erudite, most sane and consequently most successful effort in that direction that I have come across. Mr Dawson has made a heroic endeavour 'to study man's past, not as an inorganic mass of isolated events, but as the manifestation of the growth and mutual interaction of living cultural wholes', and to present the result as a picture that the layman may read without a glossary.

His book is not in any sense an archaeological treatise; it contains no account of types of axes, pot-forms or tomb-plans. Yet the author is thoroughly conversant with the archaeological data and with the technical literature. He has by no means confined his attention to compilations but has obviously mastered many of the original publications.

Our author takes as his unit not the 'race', nor the area, nor yet the culture-cycle of Graebner and Schmidt, but rather the culture defined as 'a common way of life—a specific adjustment of man to his surroundings and his economic needs'. His account of the palaeolithic period is refreshingly brief and focuses attention on the modern representatives of the ancient hunters and the inferences that may justly be drawn from a study of their spiritual life. Thereafter he proceeds to a quite excellent account of the peasant cultures of eastern and central Europe—Lake-dwellers, Danubians, Vase-painters, and Thesalians—wherein he happily emphasizes their importance as the persistent background of all subsequent developments. These cultures, however, he rightly contends, must be understood as emanations from the Ancient East, and so he gives a lucid treatment of the cultural development of Mesopotamia and Egypt. A combination of the oriental sources with inferences from modern survivals then allows a peculiarly vivid appreciation of the religion and spiritual life of the 'neolithic' peasant peoples. Next comes the megalithic culture whose diffusion is, as usual, ascribed to some sort of prospectors without any exact location of their starting place apart from a very tentative hint of Arabia. Then we are introduced to the Beaker-folk and the Battle-axe peoples; Dawson identifies the latter with the Aryans and very felicitously shows the positive rôle of the warlike invaders among the peasants. At this point the narrative returns to the ancient East of the New Kingdom and the Hittite Empire and thence back up the Danube to Aunjetitz (Czech *Unětice*, not 'Unetics' as here). The Central European and Italian Bronze Age is not very adequately described in twenty-nine pages, whereafter we return to Mycenaean and Heroic Greece and so in the concluding chapter to the Italian Iron Age and Hallstatt.

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The total result of this wide survey is a more comprehensive and reliable sketch of the achievement of civilization in the Near East and Europe than has heretofore been offered by any individual author. The standard of accuracy is remarkable high—but the Broken Hill skull is no proof that a type 'closely allied to Neanderthal man' existed in South Africa, nor was the Latin alphabet derived from the Etruscan.

In general too the emphasis falls on the vital traits. Yet some will certainly object that the differences of what are termed the 'painted pottery cultures' have been unduly glossed over. Again the pacific character of the archaic civilization has been exaggerated. The oldest historical documents from the Ancient East, from the Gebel el-Arak knife-handle and the Narmer palette to the newly discovered 'standard' from Ur, give the lie to Dawson's thesis.

It is perhaps more serious that the geographical and climatic background is not kept more vividly before the reader. We get the impression that the climate and hence the flora of the world, outside the Baltic area, were left static after the melting of the glaciers. Yet in the 'Age of the Gods' man's environment underwent revolutionary changes which perhaps even created the pastoral societies. The nomad cultures of Bedouins and Libyans are not necessarily derived, as is here implied, from hunting stocks who had acquired stray beasts from sedentary peasants. On the contrary recent researches suggest that the nomads of the desert and the predynastic peasants may represent merely different adjustments to desiccation.

A more sustained effort to realize the rugged and terrible environment that primitive man had to face might have enabled the author to recapture more of the romance and magnificence of the achievements of the old men who laid the foundations of our civilization. If he had only faced the Pentland Firth on R.M.S. (*sic*) St. Ola, he would have won a vision of the megalith-builders too deep for cant phrases about 'trade' or 'maritime intercourse'. 'It is just pedantry' said Croce, 'to write about the neolithic Ligurians unless you can see the world with their eyes'. And so sometimes both Mr Kipling, who is not a professed archaeologist, or Mr Massingham, whose plight is yet worse, come nearer historical truth than Mr Dawson. Yet he is clearly conscious of the need for concreteness, and it is his greatest merit that with the aid of ethnographic parallels he so frequently transcends the abstractedness of his material.

V. GORDON CHILDE.

THE PICTS: their original position in Scotland. By PROFESSOR W. J. WATSON. *Trans. Gaelic Society of Inverness* (1919-22) xxx, 240.

THE QUESTION OF THE PICTS. By PROFESSOR J. FRASER. *Scottish Gaelic Studies* (1928), II, pt. 2, 172.

Who were the Picts? An immigrant Celtic people, answers Professor Watson, who settled in the Shetlands and Orkney Islands, and from these northern homes extended their power over a large part of the mainland of Scotland.

Who were the Picts? The question is a foolish one, says Professor Fraser, and betrays a complete misunderstanding of the nature of the problem. It is true that a people known by that name occupied part of Scotland from the third to the ninth century A.D., and were there before the arrival of the Scots or the Britons, but all that can be said in answer to the question who they were is that they do not seem to have differed in any way from the pre-Celtic population of other parts of Britain.

Here is a sharp conflict of opinion, and it adds much to the interest of the debate that both papers are excellent. Crisp and shrewd, each article sets forth its author's

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arguments with a directness and a lucidity that are admirable, and the two essays together form a useful, even if mutually quarrelsome, contribution to the study of early Scottish history.

Professor Watson's difficulty is that he feels, and many will no doubt share his opinion, that, after all, tradition must count for something. Gildas, Bede, Nennius, to say nothing of the Irish chroniclers, each one of them suggests that the Picts were immigrants—settlers, that is to say, in the far north. Can such testimony reasonably be ignored? Professor Fraser summarily disposes of Bede, but what are we to say of the sixth century Gildas? Is it impossible that this erratic and uncertain historian has recorded some surviving tradition of an early movement of the Picts before they were finally settled in Scotland, a memory of some distant prehistoric migration, let us say at the beginning of the Iron Age or even in the Bronze Age? Such a query is, of course, well-nigh unanswerable, and it is obvious that in any event it would be next to impossible to isolate such a migration upon the archaeological evidence alone. But it is as well to be quite clear on one point, namely that the people afterwards called the Picts most certainly did migrate to Scotland. Not as a single race, perhaps, nor necessarily in a single movement; but, since it has yet to be shown that neolithic man was evolved in Pictland, it follows that the composite prehistoric civilization found therein, beginning with the neolithic cairns and ending with the much later brochs, was in its origins derived from other lands. The question between Professor Watson and Professor Fraser is not then a controversy as to whether the people subsequently called Picts were originally immigrants, for it is certain that ultimately they must have been so. On the contrary, what is to be decided is the question whether their arrival had anything to do with the movements of the Celtic-speaking peoples.

One of the arguments that has been adduced as showing that the Picts were a non-indogermanic (and therefore non-Celtic) folk depends on their alleged matriarchy as detected in the order of succession of their kings. But Professor Fraser, after examining the genealogies in the Pictish chronicle, rightly observes that there is no real evidence that a matriarchal system did prevail. There is not really any evidence that the Picts preserved a law of succession without parallel among indogermanic peoples. The Leinster kings, for instance, seem to have been familiar with a system of the same kind, and so too were the germanic royalities of early Denmark, if the Frankish chronicles are to be trusted. It almost seems, however, that the chief characteristic of the Pictish law of succession is not so much a system as a lack of system, and, in the absence of a convincing demonstration to the contrary, it may be hazarded that the apparent irregularities can be best explained on the grounds that the chances of a king's son succeeding his father depended more on his age and authority than his degree of relationship. In a word, it is surely impossible to exclude a suspicion that succession may have been partly controlled by the primitive but potent factor of *force majeure*. Thus a supposed matriarchal law of succession is not likely to offer any valuable clue as to the identity of the people called the Picts.

Professor Watson, in dealing with the language of Pictland, decides that the evidence of chief importance is the northernmost tribal names recorded by Ptolemy, that is to say tribal names from the district he considers to be the first Scottish home of the migrant Picts. He remarks that in his opinion these names—Caireni, Cornavii, Lugi, and Smertae (why not add the Decantae?)—and also the suppositional Orcs of the Orkneys, are Celtic, and he supposes furthermore, that the two Celtic names Orcas, Orcades, were already there in the fourth century B.C., since they come from Pytheas; whence it

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follows, on his view, that the Celtic tribe of Orcs was already there. The Picts, then, were tribes with Celtic names and were presumably a Celtic-speaking folk.

Professor Fraser's method of enquiry is different. From a study of placenames in Pictland he concludes that the utmost that may be inferred from the available evidence, so far as the prehistoric period is concerned, is that a non-Celtic and a Celtic language overlapped in Pictland and that this Celtic language was probably Goidelic.

Now without entering at all into the great dispute as to whether the first Celtic tongue in Pictland was Goidelic or British, we have to ask ourselves whether the people called Picts introduced this tongue, or whether they, speaking a non-Celtic tongue, were in possession of the land when the Celtic tongue was introduced by immigrant Goidels or Britons. The answer to this, if we confine ourselves to the content of these two papers, depends simply on the value to be attached to Professor Watson's arguments from the tribal names. If it could be demonstrated that there were Celtic tribal names in the far north in the fourth century B.C., it would certainly be perverse to insist on calling the Picts pre-Celtic, even though there may have been at the same time a large pre-Celtic element in the population of Pictland. But most historians will surely agree that it is quite impossible to establish the high antiquity of these Celtic names. Nobody can be certain that the Orcs were known by that name to Pytheas, and as for the Ptolemaic names, it is difficult to see how they can be made to prove anything at all. Whether Goidelic- or British-sounding, all we really know is that they were recorded at second- or third-hand by a foreigner long after the initial Celtic migrations into Great Britain. They are therefore totally untrustworthy as an index of the race and language of the people concerned.

The unwelcome fact is that there is no way of advancing with anything like certain steps beyond Professor Fraser's position, and for the Picts of Scotland it looks as though he has said the final word. His answer to the question 'Who were the Picts?' is certainly exasperating, and, in the light of the writings of the historians of the last century, it sounds like headlong retreat. But it is the correct answer, and if it is retreat, it is only an act of wise generalship leaving us the stronger, inasmuch as we need worry no more over the defences of an untenable position.

Professor Fraser doubts whether there were Picts in Ireland. But this is simply due to a difficulty over the ways in which the name 'Cruithni' is used; for it is generally admitted as likely, in fact as highly probable, that before the Celtic migrations the greater part of the British Isles was inhabited by folk akin in race and language to the Picts of north Scotland. The position in this respect is admirably defined, as is well known, in that bible of the Celtic historians, Professor Eoin MacNeill's *Phases of Irish History*.

As a last comment, it may be observed that the recorded religion of the Picts has no bearing on the problem of their race. Much is heard of their druids and their druidism, and Irish tradition even ascribes to Irish druidism a Pictish origin. But no attention need be paid to this. Even to Gallic druidism was ascribed a British origin, and that is but another instance of the common feeling that 'the other fellow's magic' or 'over-the-sea magic' is better and more potent than one's own. Such wholesome respect for a neighbour, since that is all it is, can tell us nothing as to the real origin of the religion concerned, nor, in this instance, can the fact that the Picts had druids prove anything more than that they had in time become accustomed to bestow the favourite Celtic name for a seer upon their own wise men. Indeed, it may even be that many of the Pictish druids were Celts in Pictish service. Broichan, for instance, as Professor Fraser says, may well have been a Briton.

T. D. KENDRICK.

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NUMANTIA III; die Ergebnisse der Ausgrabungen, 1905-12; band III, Die Lager des Scipio. pp. 268, and 54 plates in the text-volume; folio container, with 1 map and 46 plans. München: Bruckmann. 1927. 90 r-m.

Before the events of 1914, our appetites had already been whetted (in the *Archäologischer Anzeiger*, and in the *Journal of Roman Studies*), with the wonders of Roman Republican castrametation, which Dr Adolf Schulten, of Erlangen University, had disclosed at Numantia, in a seven-year campaign. Then the long-promised volumes, stately productions in the modern German style, began to appear. The first two dealt with the native Celtiberian aspect of Numantia; now come the volumes dealing with the Roman side of the tragedy. The third volume is under present consideration, and the fourth is promised soon.

The introduction is long, and in German fashion aims at a reconstruction of the whole historical and psychological background. In this case the treatment is admittedly worth while. Guided by Dr Schulten, we pass up the Douro towards Numantia, late in 134 B.C., and consider why Scipio chose to beleague rather than to assault. From a consideration of the Classics in general, rather than of Scipio's affairs, the answer given is economy in man-power, and the gruff principle of Corbulo, *dolabra hostem vincendum esse*. Two temporary camps are built; and thence is directed the building of a great circumvallation with seven fortlets. Two of the seven are legionary encampments, the G.H.Q. of Scipio and Fabius Maximus. These are Castillejo and Peña Redonda, lying one at each end of the long axis of the great irregular oval (constructed to suit contours), and in sight of one another for signalling purposes. The whole circumvallation was 9000 metres long, and would seem to have taken not more than two to three weeks to construct, to judge from the useful group of analogies quoted. The force involved was some 20,000 legionaries (Roman and Italic) and 40,000 auxiliaries, consisting of light infantry, archers and slingers. Much artillery was also used, but the number of machines is unknown, and the attempt made to estimate them, though reinforced by much interesting external (some might say irrelevant) material, is not convincing. Twelve elephants complete the force, and are useful in frightening Iberic light cavalry.

The disposition of the force next claims attention. The garrison of the circumvallation was 30,000, of which 10,000 was considered as reserve; in short, 4,300 to each of the seven camps. Valuable details are preserved by Appian about the signalling: a simple affair of flags by day and torches by night, arranged in the towers, with trumpets as well. These served for generalities, messengers for details; and the messages passed from post to post by word of mouth, or were taken direct by special messengers. This is a passage useful to students of our own frontiers, for the Roman was conservative; or, as Schulten remarks, 'soll man es konservativ oder borniert nennen?'!

Finally, follows an estimation of the inhabitants of Numantia, some 8000; and reflections, not without interest for the student of Roman thought, upon the effect of Stoicism on the Roman character, giving it two sides, merciful and hard; though, to be sure, the hard usually won in war. Hence the fate of Numantia, and the sparing of lesser communities. Stoicism succeeded no better in 133 B.C. than Christianity in 1914 A.D. The way is now prepared for a description of the actual remains. Of the circumvallation, 1680 metres (divided among different parts of the circuit) were dealt with out of the original 9000. It was built as a composite rampart, consisting of two retaining walls, packed with stones and earth between. The width varied from 6 metres to 2.40 metres (Appian's dimension), with an average of 4 metres [retaining wall, 0.40m.]. The height given by Appian, 3 metres exclusive of breastwork, is accepted. At every 100 feet were

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towers, 5 metres by 4.5 metres, sometimes on the line of the wall, sometimes immediately behind it. A special bridge, resembling in plan the Tyne-bridge at Chester on Hadrian's Wall, crossed the Douro. Appian says that there was also a ditch; but the ground was rocky, and no ditch was found, in spite of the fact that it appears on a restored section, in order to make the agreement with Appian more precise.

The two main camps are then described, for the others were never fully dealt with, and are in bad condition. Peña Redonda is the best preserved. It is an irregular oval of astonishing shape; only Raedykes, and Cawthorn central camp correspond to it in any way in Britain. The rampart resembles the wall of circumvallation. The east gate has a *titulus*; the north two towers, and a natural ridge of rock guards it, in the manner of a *clavicula*. There is no ditch, although Schulten believes it to have been allowed for in gromatic measurements. On the north-east a simple breastwork takes the place of a heavy rampart, for contours are sharp; and the same thing presumably happened on the north-west. This is much the same as at Raedykes, where contours also dictated two types of treatment. Then come internal buildings: short barracks for the cavalry, long ones for the legionaries, a mixture of the two for the allies; tribunes' houses, *praetorium*, *forum*, *quaestorium*, and *tribuna* (the last three perhaps less certain). The superimposed gromatic grid plan gives it all remarkable symmetry, and may express the ideal form, as it certainly fits the general state of affairs. But the buildings will wander. This, however, is not serious. On the other hand, it is a matter for pointed comment that the buildings themselves do not fit the ideal forms which are given to them individually. Sheet XIV-XV (cavalry barracks) fairly illustrates this. The buildings in question are sufficiently alike to show that they had the same general purpose. Then why go further, and, like a Formal Logician at play with the syllogism, give us a 'formal' barrack, which has nothing to do with realities, and then call this a 'reconstruction'? The remains themselves are so important, and so well planned in detail, thanks to Dr Fr. Schmidt, that they will stand for themselves well enough. Again, while these 'reconstructions' are formal, they are far from ideal. Nothing will excuse the 'restored' *praetorium*. It is shockingly drawn, exhibits no more Roman feeling than the *praetorium* at Saalburg, and has no relation to the facts, as anyone can see who compares the restoration with the plans.

Of the greatest interest is also Castillejo. Two camps, distinguished by their different levels, orientation and technique, lay there before Scipio placed a third on top of them. Their buildings reflect the same conditions as those of Peña Redonda, and it is impossible to consider them here in detail. But their exposition has the same faults. Scipio's camp provided a most interesting *praetorium*, and still more interesting granaries, all of which forestall, in a way which delights the student of Roman military affairs, early Imperial forms. But, once more, what reconstructions! Here a splendid chance has been lost. For reconstructions, sketches though they be, are the one way of making the remains of Numantia intelligible to the public, general and scholastic, and this is the official publication of the site. Where else, if not here, should adequate reconstructions be made?

In view of what has just been said there is no need to criticize the plans in detail. The actual-state plans are excellent—a credit to the excavator, and to Dr Schmidt who made them. The restorations are, in every respect, not worth the paper on which they are drawn. The general maps, productions of General von Lammerer, are beyond praise: for they permit the reader, by means of colour, to appreciate at a glance the whole disposition of an extremely complicated site. If a comment might be made, one rather

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wishes that the three-period colouring of Castillejo had been carried on to the general plan thereof, for it would thus have been clearer. But these are counsels of perfection. Yet a word should be added about the illustrations in the text. Here the photographs are in general good, if on the small side. But plates II.2, V.6, XI.4, and XVIII.2, are out of focus. The technique of XII.3, and XXV.3, which are drawings, is bad, and contrasts sharply with that of plates XXXIV-XLVII and LIV.1, which come from von Groller's skilled pen.

'Vagliami il lungo studio ed il grande amore', exclaims Schulten at the end of his preface. That is a cry which every serious archaeologist can echo, and here we can gratify the author's wish. It is not easy, to those who have not done the like, to realize the toil and strain of seven years on a site like Numantia. Much knowledge has been gained that will be of permanent worth. We are supplied with a vivid and truthful commentary upon the siege of Numantia, which enables us to visualize every important detail thereof. That alone is no mean triumph. But there is also so much that is valuable in implication. Now we know, as never before, from actual facts, just what work could be got out of a Republican army in the field by a competent general. Things like Pompey's camp at Dyrrachium become much more credible. We realize, too, that many features of Imperial fortresses go back a long way; the standard barracks, granaries, *praetoria*, tribunes' houses, are all there. Moreover, Dr Schulten claims Scipio as an innovator in some of these things; and everyone will await with the greatest interest his account in volume IV of the five camps of Renieblas, and those of Almazan and Aguilar, which are expected to substantiate these claims. But there is another side to the picture. The remains of Numantia were in no way spectacular, and they produced no spectacular find. Objects were poor; structural remains badly preserved; the forms of many buildings pitifully inconclusive. The work must often have seemed tantalizingly unproductive, desperately difficult to interpret. It obviously required the greatest tenacity of purpose, the keenest enthusiasm, to carry the work through to the end, and to deal with the interpretation of the remains as they appeared. If it has been necessary to raise firmly the question of the reconstructions, it has been done with the feeling that, where all else is so good, Dr Schulten has not been well served in this matter; and it is our earnest hope that he, who must have so much material to give by personal contact, will be better served in future. The importance of the sites in the Numantian district is so great for the history of Roman castrametation, that no effort should be spared in making them intelligible on the side of interpretation. In other archaeological respects Professor Schulten is to be congratulated so warmly, that one hopes there may be opportunity yet to congratulate him in this. This volume, and even more, we believe, the volume which is to follow, should be in the hands of every student of Roman fortification. I. A. RICHMOND.

THE BRITISH SCHOOL OF ARCHAEOLOGY IN JERUSALEM: *Bulletins* 1-7 (1922-5); *SUPPLEMENTARY PAPERS*: *Origin of the Plan of the Dome of the Rock*. By K. A. C. CRESWELL (1924); *INDEX OF HITTITE GEOGRAPHICAL NAMES* (1925). By L. A. MAYER and J. GARSTANG. London: 2 Hinde Street.

The British archaeologist has no reason to be proud of his Government which can afford to squander thousands of pounds upon objects which appeal only to the more animal side of human nature while it cannot spare even a small pittance for the needs of the historical sciences. Even the £500 a year which was granted to the British School in Jerusalem after our acceptance of the mandate for Palestine has been withdrawn and

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it is doubtful, therefore, whether the School can continue to exist. There might possibly have been some excuse for the governmental policy in regard to science in the days when taxation was light and the bulk of the wealth of the country was in the hands of a specially educated class, but such an excuse is no longer applicable to an age of socialistic democracy. The archaeologist not unfrequently wishes that he lived under the more enlightened Governments of France or Italy.

During the short period of its existence the British School in Jerusalem has managed to do a considerable amount of good work. Apart from excavation and archaeological exploration it has produced some excellent publications, among which Col. Creswell's monograph on the Origin of the Plan of the Dome of the Rock is especially prominent. The few Bulletins, moreover, which it has been able to issue, are full of important matter. The reports of the excavations at Ascalon, Tannurah and Jerash are more particularly valuable; so also is the account of Mr Turville-Petre's discoveries in the palaeolithic caves of Tabgha on the Sea of Galilee, while the architect will be interested in Mr Horsfield's work at Jerash. In the careful description and dating of the Palestinian pottery we may see the hand of Mr Phythian-Adams, who has also contributed an interesting article on the Philistines from an archaeological point of view. In fact, a study both of the text and of the illustrations of the articles relating to the pottery will be found indispensable to the future excavator in Palestine.

An important contribution is that on the geography of the Plain of Acre, one result of which has been the discovery of the site of Hazor and the initial excavation of the site by Professor Garstang. Of special interest to myself is the monograph on the geographical names found in the Hittite cuneiform texts. It is a most useful compilation, and though we may disagree with some of the identifications, more or less tentatively suggested, the materials for forming a conclusion have been brought together for the first time and methodically arranged. As for the objection that the Hittite sphere was in Asia Minor and not in Palestine we are becoming increasingly aware that the Hittites were an element of primary importance in pre-Israelitish Palestine, and that the history and ethnology of the country cannot be understood without a knowledge of them. As the book of Genesis states, Heth was the second son of Canaan.

A. H. SAYCE.

BOUWSTOFFEN VOOR DE GRONINGSCH E OERGESCHIEDENIS. Door Dr A. E. VAN GIFFEN. Overdruk uit Verslag van het Museum van Oudheden te Groningen, 1928.

This booklet contains an account (in Dutch) of recent discoveries and excavations in Holland by the author.

At Wessinghuizen three grave-mounds with internal timber constructions, and an urn-field in their immediate vicinity were excavated. It will be remembered that Dr Van Giffen investigated and published the account of the interesting and important timbered mound at Harendermolen near Groningen. (*Præhistorische Zeitschrift* xv, 1924). The three mounds now recorded at Wessinghuizen are an addition to our knowledge of these mounds with internal structures of timber. The best known example of the kind so far found in Britain is that at Bleasdale in Lancashire (see *ANTIQUITY*, i, 228). In mound no. 1 at Wessinghuizen, a central grave that had contained a burial by inhumation was found surrounded by a roughly circular double ring of post-holes; these two rings were placed only about half a metre apart, the spacing between the holes being about the same distance. Outside these two rings, but still

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under the covering of the mound, was a third ring of larger post-holes fairly regularly spaced from two to three metres apart. The diameter of this outer ring was about twelve metres, and of the innermost of the double ring about eight metres. Dr Van Giffen believes that the posts originally reached above the top of the mound.

In mound no. II, the timber construction was apparently very similar to that of no. I, but of rather smaller dimensions; in this case the central primary grave had been previously disturbed. In mound no. III, the wooden construction differed somewhat from that of the two other mounds, and as the primary burial was after cremation it may be somewhat later in date; the primary burial was found on the floor level, not sunk in a grave as in the two first instances, near the centre of the mound, and surrounded by concentric rings of post-holes. The holes were all of about the same size, placed closely together, but varying in number in different parts of the ring; on the east side there were as many as six holes placed one behind the other, while on the west there were four, and on the north only three. The outer diameter of this ring of holes was from ten to eleven metres, and that of its inner edge eight to nine metres. All the three mounds had been made by piling up first turf and then sand on top of it.

Encroaching on mound no. II an urn-field was found, and another of a similar character a little west of no. I. The urn-field consisted of a number of burial places surrounded by trenches or small ditches, some round, some oval, and others of key-hole or hand-mirror shape (*kleutelgat of hand spiegel*); the burials were after cremation and placed near the centres of the little enclosures, either in urns, cloth, or merely collected into little heaps; these seem to have been covered over originally by the material dug from the enclosing ditches, so that they would have appeared as little trenched mounds. The diameters of the circles varied from about five metres to about two metres. The character of the pottery dated these urn-fields to the last century or two before our era. A cemetery of the Carolingian period at Onnen near Harendermolen was also examined. An early Bronze Age skeleton burial with a beaker was found among these graves; the burial seems to have been made in a sort of wooden shelter or hut within a pit-dwelling sunk into the ground, and a reconstruction of this is shown. The various sites and discoveries are well and clearly illustrated with plans and excellent photographs.

M. E. CUNNINGTON.

ETRURIA ANTICA. Second edition. By PERICLE DUCATI. Turin: G. B. Paravia. 1927. 2 vols. pp. 178, 203, and 25 plates, 1 map. 24 lire.

A GUIDE TO ETRUSCAN ANTIQUITIES. By G. BUONAMICI and A. NEPPI MODONA. Florence, etc. Ente per le attività Toscane. 1928. pp. 124 and 38 illustrations (on 32 plates), 1 map. 7 lire.

The first of these two books is the second edition of Ducati's work, reviewed most favourably (as it deserved to be) by MacIver in the *Journal of Roman Studies* (1925) xv, 118-19. It is certainly a masterly little treatise, very well and freshly written, and this edition has been modified by the author in accordance with the results achieved by research and criticism. Thus he extends the fourth phase of the Villanovan culture at Bologna (the so-called Arnoaldi period) to the 7th as well as the 6th century B.C., though he still maintains his views as to the relatively late date of Vetulonia. The illustrations are excellent and the price is extremely moderate.

The same remark applies also to the second book, which originally appeared in Italian, and was briefly noticed by E. S. in the *Journal of Roman Studies* (1926) xvi, 278.

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The ground covered is, of course, very much the same, but the discussion of the various problems is much briefer and therefore more objective. While Ducati agrees with MacIver in accepting the Asiatic origin of the Etruscans, the authors of the *Guide* adopt a more non-committal attitude. In the comparatively long section devoted to the Etruscan language, however, they seem slightly more inclined than Ducati to rely solely on the combinative method, which explains the Etruscan language through itself, and less inclined to accept the conclusions of a philologist like Trombetti, who relies upon comparisons with other languages—sometimes it would seem without taking sufficient care that the comparisons are made between languages in the same stage of development and at the same or corresponding periods.*

The topographical tourist guide with which the smaller book opens is more useful from the practical point of view than the similar section in Ducati, though in both cases those who actually wish to visit the sites will do well to provide themselves with something more than the excellent maps (1 : 250,000) of the Touring Club Italiano which are referred to in each case. I should not be inclined to envy anyone who tried to find, say, the remains of the Etruscan Artena, of Castel Cardinale (Musarna), or of Civitucola (Capena), all of which I have visited, without either a guide or a map on a considerably larger scale.

Nor is the fact that tombs have been discovered even in large numbers a guarantee that there is anything to be seen there now. I certainly would not recommend a visit to Capena (nor to other sites such as Mør lupu or Riano) for that reason only.

And why is only one Etruscan bridge mentioned at Bieda, whereas there are two, both of them Roman, as I think has been clearly shown by Koch in *Röm. Mitt.* (1915) xxx, 175-80? And is there any real reason for seeing anything Etruscan in the theatre at Ferento, as the authors of the *Guide* do (Ducati wisely omits it)? T. ASHBY.

THE ETRUSCANS. By D. RANDALL-MACIVER. Oxford University Press. 1927. pp. iv, 152, and 14 illustrations, 1 map. 6s.

This is another excellent little book by a master in his subject, but written in an even more popular way. As an introduction to a difficult but fascinating subject, which is now, owing to the activities of the newly established permanent committee for the study of Etruscan antiquities in Florence, coming into considerable prominence (see ANTIQUITY, II, 250), it is the only up to date work in English; and its admirable lucidity and sobriety of judgment may commend it to readers of all classes and countries. The author's two monumental works, also published at the Clarendon Press, *Villanovans and Early Etruscans* (1924) and *The Iron Age in Italy* (1927) will naturally be consulted by those who desire further details and further information; for in this little book there are no references, and no bibliography. We may fairly apply to it the praise which he himself bestowed on Ducati's work: 'He is never for a moment dull or pedantic, but even in the most technical places wears his erudition with an attractive grace'. T. ASHBY.

STUDI ETRUSCHI. Vol. II. Comitato Permanente per l'Etruria. Florence. 1928. pp. 798, and 60 plates. 180 lire.

The second volume of this fine series† which appeared before the Congress of

* A. Trombetti's *La Lingua Etrusca* is reviewed in ANTIQUITY, II, 378-80.

† Volume I is reviewed ib. id. p. 250.

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Etruscan Studies of last April was over (see *ANTIQUITY*, II, 337) contains, like its predecessor, a number of interesting articles. It begins with a short paper by Van Duin, in which he maintains that the she-wolf which Dante saw on his first entrance to the Inferno, and which he describes in far greater detail and with far greater liveliness than the panther and the lion which he met just before, is a recollection of the Capitoline wolf. In his time the statue, without the figures of the twins, stood high up on the front of the Lateran palace, at the place of execution; and the terror which it inspired is well represented in his description.

Next, MacIver, in a brief paper which is a summary of chapter 7 of his *Etruscans*, maintains the independence of Etruscan art before the 6th century B.C., in what seems to be a perfectly convincing manner, only admitting Greek predominance even after that period in the minor arts and in painting, and not in sculpture and architecture.

Other articles on isolated works of art follow, and then comes one by Gabrici on the Casuccini collection in the museum at Palermo. It was formed of objects found at Chiusi in 1829-62, was purchased by the Government in 1865, and, by a rather unfortunate decision, sent to Palermo. As it has never been catalogued (an enterprise which will be difficult, owing to the lack of exact indications of provenance), or even properly examined, Gabrici's notes and illustrations on some of the more important pieces are welcome. Unfortunately some of them have been badly restored by inexperienced hands. Some of the stone *cippi*, in the base of which was a cavity for the urn containing ashes, are especially interesting.

Two articles on the Tomba del Cardinale at Tarquinia follow, the first of which is translated from Van Essen's *Studies in Etruscan Tomb Paintings*, but it is to be noted that the author now brings down the date from 230 B.C. to 120 B.C. As the paintings are too much damaged to be photographed we are thrown back on the drawings of Byres, made about 1780.

The objects discovered in the tomb of the family of the Calini Sepus, excavated at Monteriggioni, near Siena, in 1893-1901, are catalogued in detail by Bianchi Bandinelli; they belong to the 3rd-1st centuries B.C.

A more important paper is that of Dragendorff, who has identified a representation of a *haruspex* (a surprisingly rare subject) on an Aretine base.

In the linguistic section which follows there is a long article by Goldman on two Etruscan roots: *aru* (day) and *nae* (night); a shorter paper in which Devoto takes instances of Greek words which have passed into Latin through Etruscan, e.g. Hercules through the form Herelo; an article by Buonamici on the inscription of the hypogeum of S. Manno near Perugia: it is a rectangular vaulted chamber very finely built in stone, with a niche in each side. The inscription (following Torp and Corssen) he translates: 'May Saucius grant a place of repose here for the souls in this family tomb built for Aulus and Lars, of the family of Precu, sons of Lars and of Cestnei. The family of Precu has ordered that the ossuaries and urns shall be placed here, and domestic supplications and double offerings made'.

The naturalistic section contains a long paper by Bonacelli on *Nature and the Etruscans*, summarizing our knowledge from ancient authors of the flora and the natural features of the country. The question as to the share that malaria had in the decline of Etruria, as in that of the rest of Italy, cannot be said to be as yet solved, as Fraccaro's paper in this same volume reminds us.

The *Notiziario* contains a number of interesting items which cannot be particularized here, but one important article must be mentioned, in which, after a detailed study of

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the names of localities in the upper Adige valley, Battisti concludes that there is no evidence to be got from them in favour of the theory that the Etruscans came to Italy by land, but quite the contrary. Pareti, in his *Origini Etrusche*, was more than once misled by lack of local knowledge; and even Ducati (*Etruria Antica*, 1, 32) admits 'undeniably Etruscan characteristics' in the local nomenclature of the Raetian valleys.

Altogether the volume is an important production, and reflects great credit on the enterprising Committee for Etruscan Studies. T. ASHBY.

LA LIBIA NELLA STORIA E NEI VIAGGIATORI. By ARCANGELO GHISLERI. Turin: G. B. Paravia & Co. 1928. pp. viii, 171, and 5 plates. 17.50 lire.

This is a short summary of the sources of our knowledge of what is now North Africa, from ancient times to the Italian occupation, by an author who had before the war (in 1912) published the third edition, which appears to be out of print, of a general and profusely illustrated work on Tripolitania and Cyrenaica. Unfortunately the descriptions of them by classical authors are given only in Italian translations, and sometimes without precise references. Nor is a single ancient inscription cited.

A considerable amount of space is devoted to the journey of Della Cella, but the frequent criticisms of his work by the brothers Beechey are entirely ignored. Nor does our author seem to be clear as to the use of the *Asnām* (the plural of *Senām*) which Bartoccini* had already followed De Mathuisieulx in describing as oil presses of the Roman period. There is no attempt to describe the recent Italian excavations, though a few rather antiquated photographs of them (*e.g.* of the *thermae* at Leptis in 1910!) are given. Nor does the author's own previous work seem to have been the result of independent exploration, inasmuch as it is not cited in Attilio Mori's *Esplorazione geografica della Libia*, a complete account of the investigations which travellers have carried on there from the beginning of the 19th century up to 1923. This was published in 1927 by the Ufficio Studi of the Government of Cyrenaica, and is, for the period with which it deals, in every respect to be preferred to Ghisleri's book. T. ASHBY.

DALLA PIANURA DI ADALIA ALLA VALLE DEL MEANDRO: impressioni di viaggio. By BIAGIO PACE. Milan. Casa Editrice 'Alpes'. 1927. pp. 312, and 81 plates. 20 lire.

The impressions which our author records in these pages are rather political than archaeological, and have to a considerable extent been published as such; while Professor Pace has already recorded the archaeological results of his journey in the *Annual of the Italian School* at Athens; and the photographs, many of which have appeared there, will be found of very great interest.

He does not, it will be interesting to note, share the unreasoning tenderness for Turkey, and blind hatred of Greece, which some of his countrymen have displayed in the past, and which have certainly helped to lead Italy astray in Asia Minor, whatever blame (and according to our author it is a good deal) may fairly attach to her allies. T. ASHBY.

THE LETTERS OF GERTRUDE BELL. Selected and edited by LADY BELL. Ernest Benn. 1927. 2 vols. pp. 791. 42s.

This is in no sense an archaeological book, but it is one which cannot fail to appeal

* *Le Antichità della Tripolitania*. Milan, 1926.

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to archaeologists and to all those interested in the Near East. Gertrude Bell's contributions to science, her work on the palace of Ukhaidir—which she was the first to plan and study, her work on the *Thousand and One Churches* done in collaboration with Sir William Ramsay, and the accounts of her travels in the Syrian and Arabian deserts with all her observations on the antiquities encountered there have been published elsewhere, and the references to them in these volumes add but little to our positive knowledge. Here we have the record of a full and busy life wherein archaeology, though it was always a passion with her, was but one of many pursuits not less absorbing; the picture that it gives of Gertrude Bell may enable us to apprise better the value of her work in one particular field, but its interest is wider than that.

Here was indeed an extraordinary personality. She was brimful of enthusiasm in whatever she undertook and she possessed a physical energy and powers of endurance to match; the stories of her Alpine feats only bring into prominence in a dramatic form qualities which in fact informed all her work alike. She had an amazing gift for assimilating knowledge, as witness the facility with which she mastered languages, picking up at least the rudiments of Hindustani and Japanese while on her way out to India and Japan, acquiring almost without effort a very real knowledge of Persian, and becoming a good Arabic scholar as an introduction to and in the course of her desert wanderings: but she was not deceived by superficial talent and, herself an indefatigable worker, reserved her admiration for the more detailed and more laborious forms of research. It was this that made her judge so fairly her own limitations; on a subject in which she was well grounded she would speak with conscious authority; where she felt herself perhaps equally interested but less competent she was delighted to learn and never ashamed to employ the help of others, and her letters shew how generous she was in appreciating whatever was done for her. Most clearly of all does the book illustrate her intense and ready sympathy with people. It was this quality which gave such value and fascination to her records of travel, that flung her whole-heartedly into the cause of Arab independence, that made 'al Hatous' second only to 'Cokkas' in the estimation of the Iraqis, and yet kept her, in the midst of labours such as would have engrossed most people completely, as keenly interested in the thoughts and doings of her friends at home as if she had nothing else to care about. Indeed if anything obscured her clarity of judgment it was this genius for friendship, but perhaps on this point her published letters are somewhat misleading; where they deal with the politics of the Near East they have been rigorously edited, not to say censored, and a wider selection might have shown that her views were less coloured by personal values than here seems to be the case. Certainly as a record of the development of Iraq the letters suffer from the suppression of much on which her strong sympathies and trenchant expression would have thrown light, but it is only fair to remember that the book makes no claim to be such a record and at most reflects the part played in those events by Gertrude Bell. Actually, in proportion as the forms of settled government supplanted the personal direction of affairs characteristic of the earlier days, her political duties became more a matter of routine, no longer filling all her time or satisfying all her enthusiasm, and by turning again to archaeology she was able to do pioneer work of more permanent value than any now devolving on her political office. Undertaking the post of Honorary Director of Antiquities, she drew up, after consultation with many archaeologists, and in the face of considerable opposition on the part of Iraqi officials as bigotted as they were ignorant, a scheme of law which should at once protect the interests of Iraq and encourage the activities of foreign institutions, and she then proceeded to form a department and a museum. The prospect was not encouraging,

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she had no staff and no funds ; characteristically she raised helpers from all sides, infecting with something of her own enthusiasm Iraqi ministers and British officials of other departments, who might unexpectedly find themselves acting as archaeological inspectors or as assistants in the little museum housed in a single room of the Government Serai. Her greatest achievement was in March 1926, when she persuaded the Government to hand over for a permanent museum one of the best buildings in Baghdad and to allocate a substantial grant for its equipment ; considering how hard pressed the Government was for funds and how many public services were demanding money for more material objects this was a triumph indeed and her pride in it was more than justified. Into the task of preparing the museum and installing the already considerable collections she threw herself with an energy which was too much for a strength undermined by the constant strain of work and by the heat of summers spent in Baghdad ; she had been urged to leave and had refused—' it isn't merely a responsibility to the Iraq but to archaeology in general ', and her death on 12 July 1926 was a real sacrifice of herself to science.

These later letters bring out one point of which those of us who worked with her had every reason to be sensible : intent as she was to further the interests of the country she loved so well and to develop the museum which was her creation, she preserved a long view and put always the cause of ' archaeology in general ' above local and immediate advantage. While then the Baghdad museum, already enriched beyond her dreams, is her most obvious material monument, it does not represent her greatest service : the policy which she initiated and liberally interpreted of encouraging scientific exploration in Iraq has put a wider world in her debt.

C. L. WOOLLEY.

THE SCOTS MERCAT ' CROSS '. By WILLIAM GEORGE BLACK, F.S.A. Glasgow: Wm. Hodge and Co. 1928. pp. 36, and 6 plates. 2s. 6d.

Mr Black has succeeded in producing in a convenient form a very readable and instructive addition to the existing knowledge of those monuments dear to the heart of a Scotsman which go by the name of Mercat Crosses, although, as the author points out, the addition of a cross as such to the original stone pillar in these monuments may be considered generally to have been a matter of by no means primary importance. The work in question is divided chiefly into a historical survey of the Mercat Cross of Glasgow and an essay on similar crosses in general. To this is added an appendix consisting of notes from the *Old Statistical Account of Scotland* and other sources dealing with various monuments taken by the author possibly to refer to crosses, but which do not in all cases do so. For example, the cases taken from Aberdeenshire cannot, with the possible exception of that from Monymusk, come within this category. The Drumstone, for instance, on the farm of Upper Auguhorsk (not ' Auguhorsk ' as stated) is a natural rock of asymmetrical form, while the Gouch Stone at Dyce has never to the writer's knowledge been suggested hitherto as having any connexion with a Mercat Cross. These are very minor criticisms, however, and doubtless Mr Black is justified by his own contention that ' it is far better to be over-generous than niggardly ' in including monuments which are not crosses in preference to omitting those which are.

In the many references to the various uses to which these monuments were put in past days there is one which might perhaps be added, since it has always struck the writer as being one of the most remarkable, to wit, the record that the Mercat Cross of Aberdeen was the chosen meeting-place of the local Witchcraft Coven in 1596. One would have thought that a less appropriate venue could hardly have been selected.

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There is no index to the book, but such perhaps is hardly necessary. The illustrations are one and all excellent. ALEX. KEILLER.

THE CHEAPSIDE HOARD OF ELIZABETHAN AND JACOBEOAN JEWELLERY.

By R. E. MORTIMER WHEELER. London Museum Catalogues, no. 2. 1928. 1s.

The City of London has provided many surprises during the varied excavations so continually taking place in its streets, but few can compare with the discovery in Cheapside in 1912, of what may, with reasonable certainty, be described as portion of the stock in trade of a 17th century jeweller, money lender, or both—which for the most part is now preserved in the London Museum. Dr Mortimer Wheeler has presented the details of this discovery in a very readable and excellently illustrated pamphlet, which forms the second* of what promises to be a remarkable series of booklets on the contents of the Museum.

To begin with, the collection is widely assorted; it contains articles of all kinds from a priceless watch enclosed in an emerald of fine quality and enriched with enamel, to a little strawberry leaf in bloodstone, dainty enough, but of no great intrinsic value. Between these two extremes lies the largest collection of goldsmith's work yet found together in Great Britain, not only in mere bulk, but also in the range of objects which it presents.

For the most part these objects are of moderate value, which at once suggests the conclusion that they formed the stock of a jeweller, who might well be expected to ply his calling in Cheapside. They are the jewels, not of a court lady, but rather of the merchant's wife of Elizabethan or Jacobean days, for the details of the jewels and the workmanship all point to a date soon after the year 1600. Moreover the craftsmanship and mounting are English in character, although in certain cases Italian influence is quite evident. A certain number of antique gems have been remounted in 16th or 17th century settings. These alone exemplify the spirit of the Renaissance, with its revival of a classical atmosphere.

Much too must be said for the reticence of the craftsman in his use of the precious stones at his disposal, and for his judicious use of enamel to enhance their colourings. The chains of stones, broken by enamelled links of roses and daisies, are most happy and have an English feeling about them, which differentiates them from the Italian *jardinetti* of the same period. Indeed the simplicity of the designs is striking in a period which was, in dress and appointments, so very elaborate, extravagant and artificial.

But beyond the actual jewels and craftsmanship there arises yet another interesting side light in the source from which the actual materials have come; emeralds from South America, cat's eyes and spinels from Ceylon, rubies from Burmah, diamonds from India, turquoise from Persia, opals from Hungary, all suggesting a wide range and a distinctly expansive commerce for the early years of the 17th century.

Still more interesting is the cutting, which must be European, for Orientals were never clever at this, being afraid to sacrifice the stone sufficiently to secure brilliance. Some are 'cabochon', oval or square, some 'table' cut with extreme discretion. These perhaps do not call for much comment, but the 'rose' cutting comes almost as a revelation at so early a date, and so too is the 'star' cutting of a 1655, a pendant in crystals which in its lowest stone actually shows 'briolette' or 'double rose' cutting. The only

* The first was reviewed in *ANTIQUITY*, II, 166.—ED.

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cutting not represented is the 'brilliant', which does not seem to have been generally recognized until the end of the 17th century.

Doubtless many of the gems were amuletic, following the accepted custom of an age which ascribed virtues to individual stones, and indeed to fossils as well. Among the loose stones in the hoard the writer comments on the curious presence of several fossilized fish teeth (*Lepidotus maximus*). These teeth were commonly known as 'toadstones' and were reputed to come from the head of that reptile. They were esteemed to be singularly efficacious against witchcraft, and were quite commonly set in rings; so that their presence in a jeweller's stock is not after all unusual. A similar idea is found in the ring A 14243, which has a cameo of a toad cut in chalcedony.

The writer has much that is illuminating to say as to the date of the hoard, by no means an easy matter owing to its very varied constituents, representing many dates. Two 17th century rings, for example, are set with Roman intaglios. An unset intaglio is of Romano-Egyptian origin. A cameo of Queen Elizabeth dates itself, and the two watches belong to the same reign. The grape-cluster hair ornaments must certainly be earlier than the reign of Charles I. So that on the whole the year 1600 seems to be a conservative estimate.

How came it that such a store of valuables was lost? Here only guesses can supply an answer. The box which contained them might have been hidden during the Civil War, or more possibly during one of the Plague years, when merchants deserted the city, or again it may have been hidden at the time of the Great Fire and forgotten in a hasty exodus. The most likely of these guesses is that of a plague-deserted house, since there was a specially virulent outbreak of plague in London in 1603, which coincides sufficiently with the date suggested for the hoard.

FRANK STEVENS.

THE CHANCELADE SKULL. By PROF. W. J. SOLLAS, SC.D., F.R.S. *Journal Royal Anthropological Institute* (1927) LVII, 89-122.

This important paper, which has given rise to a good deal of discussion and controversy among anthropologists, is also of interest to antiquaries and archaeologists, since its object is to review the arguments upon which are based the claims that the modern Eskimo are the descendants of the Chancelade race; a race which inhabited southern Europe during Magdalenian times.

Professor Sollas quotes Testut, the first describer of the skull, very fully, and shows how careful the description of the latter is; but a good deal of work has been done of late years on the Eskimo skull and several characteristics brought to light which were unrecognized in Testut's day, and it is these that Sollas has collected for us and has compared with his own careful revision of the original Chancelade skull.

No one who has worked at Eskimo skulls could fail to be impressed by the likeness which they bear to the Chancelade, but, of course, it is arguable that this general likeness might be caused by a similar environment rather than by heredity; and, indeed, when we come to examine the skulls very closely, there are points in which the Chancelade is unlike any Eskimo. Sir Arthur Keith has pointed out some of these; but, to my mind, the most serious difference is the fact that in the Chancelade skull the sagittal and lambdoid sutures are very complex, while in the Eskimo one of the most characteristic features is the great simplicity of both these sutures.

When we come to points of resemblance, there are so many and they are so faithfully reproduced, that their cumulative effect is overwhelming. Probably the readers of

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ANTIQUITY will not thank me for going overmuch into anatomical detail ; but here, in both groups, a suture is straightened out in an identical way, a way never seen in other skulls ; there, a usually sinuous border is planed off as though by a tool ; here, an unusual mass of bone is collected, without any reason that we can see, below the opening of the ear hole ; and there, a curious little pit occurs in the base of the skull, close to the opening of the Eustachian tube, which I think is reproduced in the available model of the Chancelade skull. The most unsatisfactory thing is that Sir Arthur Keith, with his vast experience of skulls, is not convinced ; but such experience as I have makes me feel that all these little points, each perhaps trivial by itself, in addition to the general resemblance, could not be brought about in different races by similar surroundings and habits, but must argue a rather close blood relationship.

It is needless to say that the paper is well and carefully written, though, like most craniological papers nowadays, it is difficult for even a craniologist to follow. One feels that if some of the redundant timber were cleared away one would see so much more of the wood.

F. G. PARSONS.

POTS AND PANS. By H. S. HARRISON. Gerald Howe. 1928. pp. 88. 2s. 6d.

This is an excellent little book. The author, from his extensive knowledge, aided by shrewd reasoning and careful deduction, has given us in a small compass an encyclopaedia of the art of pot making. The forms of pots, the characteristics, chemical compositions and reactions to heat of the various kinds of clays, the methods of pot making and finishing processes (in which are included slips, glazes, decorations and designs) are all discussed in a style which is at the same time easy reading and good literature. It is not every writer who has the power of enabling the amateur to assimilate most of his subject at a first reading. There is a history of pottery in England and of porcelain in China. The author announces his leanings to the diffusionist school, and gives his reasons. This admirable little treatise should be bought (its price is within the reach of all) by all those who are beginning the study of archaeology, and those who are already experienced in the subject will find it a valuable recruit to those 'bibles' to which frequent reference is necessary.

R. C. C. CLAY.

THE STORY OF THE ROADS. By CYRIL HUGHES HARTMANN, M.A., B.LITT. Routledge. 1927. pp. xx, 194, 12 plates. 7s. 6d.

The author's real interest would seem to be in present day and future roads in this country and their administration : he has made this the excuse for attempting a 'comprehensive survey' of the history of English road-travel. It is not very successful. A work intended for the general reader requires no less mastery of material than the average technical monograph, and should not merely be conflated from secondary sources. The best feature of the book is Mr Hartmann's exposition of the legal and administrative history concerned, from the Statute of Winchester onwards ; but his presentation is throughout haphazard, and the nature of prehistoric trade, the significance of Roman roads (the Icknield Way is not one) in historical geography, and the economic position of the medieval village, are only a random selection from his blind spots. There are patches of pleasant reading here and there, and the author is perhaps most successful in sketching the age of Telford and Macadam, but the general reader is ill-served by so much omission and mis-statement. Topography is practically ignored (Ogilby is only mentioned to be misdated by a century), and there are no maps.

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A chatty style in anecdote does nothing to relieve the failure of this book to do justice to its ambitious scope. On page 127, 'venial' should read 'venal'.

C. F. C. HAWKES.

HANDBUCH DER ALTARABISCHEN ALTERTUMSKUNDE, in Verbindung mit Geheimrat Fr. Hommel und Prof. Nik. Rhodokanakis herausgegeben von Dr Ditlef Nielsen. 1 Band. Die Altarabische Kultur, mit 76 abbildungen. Copenhagen: Arnold Busck. 1927. pp. 272.

For half a century many important detailed studies have been published relating to southern Arabia; and there was need of a work of synthesis, to summarize, co-ordinate and, when necessary, harmonize the results. This need is met by the *Archaeological Manual of Ancient Arabia* whose publication has been begun by Professor Nielsen, with the collaboration of experts such as Hommel, Rhodokanakis, Grohmann and Litmann. The first volume, just out, deals with the civilization of ancient Arabia; two more will follow, containing a selection of inscriptions, with translations and notes, a grammar and a lexicon. When publication is complete—and one hopes it may be soon—we shall have, in three volumes of a reasonable size, a useful summary of what is known about ancient Arabia, and more particularly, southern Arabia.

Whilst the next two volumes will be specially concerned with linguistics and philology the first covers all the other branches of science, in a form somewhat condensed. In the opening chapter—which serves as an introduction—Nielsen records the history of exploration and of archaeological investigations in southern Arabia, from those of Niebuhr down to the latest—of J. Halévy and Glaser. Then he passes in review the work carried out in Europe and the data which all these researches have provided for science. Nielsen deals likewise with other fields of discovery—Abyssinia, The Hejaz, and Arabia Petraea and The Hauran—all of them regions where other traces of ancient Arabian civilization are to be found; concluding with general remarks about this last subject. This gives us in a few pages a very good, brief, clear summing up of the whole matter. Bibliographical footnotes are provided; would it not however have been more useful if they had been collected together as a bibliographical index?

Professor Hommel, who is well known for his important works, particularly his *Southern Arabian Chrestomathy*, and his *Summary of the Geography and History of the Ancient East*, gives in a chapter of 52 pages the essential facts of southern Arabian history. After a rapid survey of the geography of the region, the sources (of which inscriptions are the most important), and the prehistory, he deals with the Minaean kingdom (14th to 8th century approximately), which carried Himyaritic influence as far as northern Arabia; then he comes successively to the priestly dynasty of the Sabaeans Mukarribs (beginning at an unknown date and ending probably at the end of the 8th century B.C.), the Sabaeans kingdom, properly so called (650–115 B.C.), the kings of Saba and Dhu-Raydan (115 B.C. to about 300 A.D.), and lastly, the more eastern kingdoms of Kataban and Hadramaut, as well as the later times of the Sabaean royal families. Though short, this narration will be found most useful, thanks to the care and accuracy of the author.

In the third chapter Rhodokanakis has condensed the substance of many works recording the social and political organization, the laws and the country life of southern Arabia. This section contains some extremely interesting ideas about tribal organization, castes, and land tenure—or, strictly speaking, about what we can infer from the inscriptions concerning them.

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'Southern Arabia is the land of ruins', says Grohmann, at the beginning of the chapter devoted to archaeology. Unfortunately the majority of these ruins are difficult of access, and one cannot hope for methodical excavations to be practicable there for a long time to come. Grohmann has necessarily therefore, so far as architecture is concerned, confined himself to the results achieved by expeditions of discovery.* But this deficiency is to some extent made good by a comparative use of ancient Ethiopian architecture, which throws light on the construction of ramparts, towers, and temples, on hydraulic works and on funerary architecture. Next Grohmann considers the sculpture, known to us by some specimens in low relief or in the round. These are, for the most part, rather stiff and awkward, as can be seen from the photographs illustrating the chapter. Finally come the minor works of art, represented by a certain number of rather pretty objects.

In the chapter relating to the religion of Ancient Arabia Nielsen summarizes those cherished theories which he has already put forward so many times before, notably in his work *Der drei-einige Gott* (Berlin, 1922)—the existence of an astral trinity consisting of the moon-god Ilmaqah ('Il or 'Ilah), a solar goddess Sams ('Ilat, Ilabat) and of the god of the planet Venus ('Attar); in this trinity the moon-god 'Il ('Ilah) would have a privileged place, being a god common to Semitism. From these religious conceptions of southern Arabia were derived, according to Nielsen, the essentials of Babylonian religion, of Mosaic monotheism, and even of Islam. It is a thesis that is full of ingenious, if disputable, ideas; and it happily concludes a fine work.

One feels however, some uneasiness about the title which is given as *Ancient Arabia*. Nielsen, it is true, in his own two chapters, deals with northern as well as southern Arabia; but Hommel, Rhodokanakis and Grohmann discuss only *southern* Arabia; and one wonders whether the two next volumes—chrestomathy, grammar and lexicon—will be regularly limited to the Arabic of the south? This would be a great pity, for Libyanite, Safaitic and Thamudean texts cannot be ignored, and have long needed synthetic treatment.

In conclusion, a word of praise must be said for the fine format and abundant and varied illustrations. The convenient index is complete, an undertaking which will certainly be of the greatest utility.

J. CANTINEAU.

INTERNATIONAL GEOGRAPHICAL UNION. First Report of the Commission on Pliocene and Pleistocene Terraces. Edited by K. S. SANDFORD. 1928. pp. 123.

This collection of papers is a welcome proof that geologists are at last paying serious attention to points which concern archaeologists; but it shows also how much remains to be done.

Prof. E. Chaput, in an excellent review, traces two raised beaches round the Belgian and French coasts, which he inclines to assign to (1) the Monastirian level (12-15m.) with Acheulean and Mousterian cultures; and (2) the Tyrrhenian level (30-35m.) with Chellean and pre-Chellean implements.

In the Nile valley Dr Sandford and Mr Arkell find Chellean and Acheulean at the same levels as in France, but the Mousterian occupies two lower terraces. In our English river-valleys, although the same two levels are well marked, both Prof. Marr and

* That is, to the results of surface observation, in default of those which might have been acquired by excavation.—*Translator*.

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Mr Dewey insist upon the occurrence of great aggradations, which may confuse the cultures, and prevent us from assuming that the deposits on the higher terraces are necessarily older than those of the lower ones.

Dr W. B. Wright gives a preliminary account of the '25 ft. raised beach' of Scotland, which, in view of its variations in level (from 35 ft. to ordnance datum), he prefers to call the 'Early Neolithic Beach': but even this is hardly satisfactory, since it is clear that its rock-shelf was cut at Oban before the Azilian period—possibly long before; and the only safe inference seems to be that Scotland has been subjected to greater oscillations of level in neolithic times than we have any evidence of in England and Wales. Even in England however the neolithic subsidence was not a continuous process, but was subject to fluctuations of level, which, according to Mr C. J. Gilbert, continued even into post-Roman times; so that they may, when fully studied, be of considerable archaeological importance.

Prof. C. Depéret, having previously established the Tyrrhenian and Monastirian levels in Europe and north Africa, now extends them to the Euphrates and the Makong; and in the former locality an implement has been found at 30m., which he compares with the pre-Chellean of the same level at St. Acheul. He concludes that this terrace-formation is not due to earth-movements, but to 'eustatic' changes of sea level; but in accepting this conclusion we must remember that it is not incompatible with local warpings (especially perhaps in glaciated regions), and that, as Scotland shows (to say nothing of Scandinavia), it is unsafe to correlate sea-beaches in distant countries by level alone, without biological or archaeological corroboration.

H. BURY.

IN THE BEGINNING. By G. ELLIOT SMITH. Gerald Howe. 1928. pp. 88. 2s. 6d.

This, the introductory volume of 'The Beginning of Things', is a statement of the diffusion theory which, by means of this series and of other publications recently issued, is being broadcast for the edification of the general public. The present volume is written in a didactic style with sweeping statements as if there were no contrary views and as if the whole subject was proven. Dr H. R. Hall has given his reasoned opinion against the priority of Egyptian over Sumerian civilization (ANTIQUITY, II, 56), and has thus shattered the foundations on which the diffusionists have built up their theory. Although most archaeologists will agree with Dr Hall, none would suggest that there is no such thing as diffusion of culture, or that independent invention is the whole story. If culture originated in Egypt, it must have risen *de novo* in that region; and if it thus developed independently in Egypt, why could it not have done so occasionally elsewhere, given the requisite opportunity? The truth lies, as it always does, in the happy medium. There are no axioms in archaeology.

This book is well-written, well-printed and of pleasing format. It is easy to read and is full of valuable information, while some of the author's deductions are both interesting and ingenious. It is certainly a book to read over and think over.

R. C. C. CLAY.

VORGESCHICHTLICHES JAHRBUCH. Bands I-III; covering the years 1924-6. Walter de Gruyter & Co., Berlin.

An annual bibliography, classified under subjects, of the papers appearing in the thousand and one transactions of the world, would be, if it were really well done, an immense boon. The multiplication of proceedings defeats its own end, unless the student

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has some means of discovering what they contain, and if they contain anything bearing upon his special line of research at the moment.

This Year-book is an attempt to meet the need, and on the whole it does so very well indeed. It is not a mere bibliography, but contains useful critical summaries of the more important papers. The first test, however, which one applies to a bibliography is the test of accuracy, both of classification and of details. The British section tested thus does not come very well out of the ordeal. It is rather strange, for instance to find Dr Clay's paper on a gun-flint factory in the neolithic section; and Dr Gardner's paper on an earthwork of almost certainly medieval age in the pre-Roman Iron Age. The classification by periods is excellent in theory, but impossible to carry out consistently in practice; for so many papers deal with remains whose age is not known.

When it comes to spelling and other small but important matters, we find that the compilers make the usual mistakes. How is it that, whereas English people do not make many mistakes in the spelling of foreign names, it is most unusual ever to find English names correctly spelt abroad, whether in books or on an envelope? We wonder whether the style of handwriting adopted on the continent may perhaps be responsible. There can be no excuse for some of the errors which abound, for instance, on pages 205 to 230 of the second volume. The correct copying of a printed title is surely not a very difficult matter, yet we find such misprints as the following:—page 208, 'Marshes' for Marches; page 212, 'anusual' for unusual; page 213, 'Aubrey, Herbert' instead of Herbert, Aubrey; page 214, 'Alderley' for Alderney; page 216, 'Trannion' for Trannion; page 217, the title of Dr Bulleid's book is printed as if Somerset were in London; page 219, Mr R. G. Collingwood's name, correctly printed on the following page, is spelt 'Coollingwod'; page 220, Mr Ian A. Richmond appears as 'Jan B. Richmond'; page 221, Gainstrop is spelt 'Gainstroup'; page 222, Baddeley is spelt 'Baddelley'. Doubtless there are many others of the same kind.

However, the bibliography is better than nothing.

THE TEACHING OF PRE-HISTORY IN SCHOOLS. By DIANA PORTWAY DOBSON. Published for the Historical Association by G. Bell & Sons, Ltd. 1928. pp. 16. 1s.

Mrs Dobson's pamphlet fulfils a most useful purpose. It is intended to guide those who wish to instruct children in the early history of mankind, and to answer the questions put to them. We are particularly glad to read Mrs Dobson's second paragraph, which is the fullest possible justification for the pamphlet itself. The information given is accurate and well chosen, and the books quoted are, without exception, both interesting and reliable. What is more, certain books, which may be interesting but are not reliable, are conspicuous by their absence. We gladly recommend all parents and teachers to buy this pamphlet. The price should be stated on the cover.

ST. KILDA. By JOHN MATHIESON. *Scottish Geographical Magazine* (March 1928), XLIV, 65-90.

THE ANTIQUITIES OF THE ST. KILDA GROUP OF ISLANDS. By JOHN MATHIESON. *Proc. Soc. Ant. Scot.* (1927-8) series 6, II, 123-132.*

It may seem strange that one of the British Islands was without a map until last year.

* The bad custom of printing the *series* number only on offprints is responsible for our not giving the reference in the more usual and convenient form.—Ed.

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In 1927, Mr John Mathieson went to St. Kilda and made a map of it. It is published in the *Scottish Geographical Magazine*, on the scale of 6 inches to the mile. There are few antiquities, and they, such as there are, are of little interest. The buried structure immediately above the village, of which Admiral Somerville published a plan in the *Journal of the Royal Anthropological Institute* (1912, XLII, 23-52), proves to be not an orientated passage-grave as he thought, but an earth-house, and therefore probably of much later date.

BAGHDAD IN BYGONE DAYS. By CONSTANCE M. ALEXANDER. John Murray. 1928. pp. 352, 16 illus. 16s.

This book is the life of Claudius Rich, who was British resident at Baghdad from 1808 to 1821. He was one of the earliest men to take an interest in the antiquities of Mesopotamia, and part of his collection is now in the British Museum. He had an adventurous career, and was one of those who make their own appointments instead of stepping into existing posts. We do not get a very clear idea of his character from this book, but it is an interesting record of a strange and interesting life.

AERIAL PHOTOGRAPHY : a comprehensive Survey of its Practice and Development. By CLARENCE WINCHESTER and F. L. WILLS. Chapman and Hall. 1928. pp. xvi, 236, 176 figures. 25s.

This book is claimed as a comprehensive survey of the practice and development of air-photography. There are no books which cover quite the same ground ; but we are not quite sure for whom it is intended. The chapter on 'Air-Photography in Archaeology' gives a very fair conspectus of the subject ; and there is a section devoted to the application of air-photography. There are also chapters on its place in education, geography and map-making. We do not quite like the substitution of 'aerial' for the more usual word ; it may be correct, but it adds to the length of an already cumbersome phrase.

The book is illustrated by a number of excellent photographs, which would have been well reproduced if they had not been for the most part compressed to a ridiculously small size—in many instances quite unnecessarily.

THE STRIP-MAP OF OAKLEY REYNES, 1795 : with an introduction to the study of Field-maps. By G. HERBERT FOWLER. Bedfordshire Historical Records Society, vol. II, part i. Price not stated.

Mr Fowler has performed a very useful part in reproducing and describing the strip-map of Oakley Reynes. A handbook with some definition of the terms used in medieval times was very badly needed, and a description of a definite area was much the best way of setting to work. For the way in which Mr Fowler has carried out his task, we have nothing but praise. Perhaps it would have been useful to have mentioned one or two good books and articles which deal with cultivation systems ; but after all, the best way to learn about them is to study the facts at first hand. Those who wish to do so must certainly get this book.

FARMS AND FANES OF ANCIENT NORWAY : The place-names of a country discussed in their bearings on social and religious history. By MAGNUS OLSEN. English translation ; Oslo : H. Aschehoug and Co., and London : Williams and Norgate. 1928. pp. 349 with sketch-map and illustrations. 8s. 6d.

In ANTIQUITY for June 1928 Professor Magnus Olsen's researches were mentioned by

the reviewer of a previous volume in this series by Dr A. W. Brøgger. Dr Haakon Shetelig's *Préhistoire de la Norvège* (1926) was a notable forerunner in this valuable group of books, in which eminent Scandinavians are summing up the results of field-explorations carried on through the past century. And as Norse is not generally read, they are wise in providing translations and making their work accessible to all. This volume is very readably translated by Th. Gleditsch, and its novelty in scope is sure to stimulate any reader to whom the question has occurred—when we have collected and interpreted our place-names, what next?

Professor Magnus Olsen's method is to classify and correlate his finds, digging down through the strata of successive ages like the explorer of a Roman site, until he is able to give an account of the social history of the country from the evidences, checked by archaeology, philology and other information that can be brought to bear upon the subject. In such a new adventure, criticism of details must be of less value at present than an attempt to sketch the main argument of the book.

He begins by distinguishing the place-names given by inhabitants from those given by travelling strangers. For example, along the coast is a string of islands of which the names are foreign; they must have been landing-sites in prehistoric times when Norway was the 'North-way' for trading-adventure to the Arctic, possibly when the country inland was hardly settled by a farming population. Then, taking the farm-names, he works back from the historical period, tracing the comparative ages of words used as elements of compound place-names. Such a word as *ruð* (ridding or reclaimed land) he finds applied to new farms formed by thralls and others of an inferior class, beginning in the eleventh century. Earlier than that are the large classes of names containing *staðir* (stead), *setr* (seat; not the same as *sæter*, shieling) and *land* (with more of the meaning of a shieling, or ground lying out from the original main farmstead). These are mainly of the Viking age, though some 'steads' can be followed back to the fifth or sixth century A.D. and they imply secondary settlements founded by cadets or retainers of the ancient families whose ancestral homes are still known by the very ancient word *heim*. Of these, some are shown by philology to date as far back as the fourth and fifth centuries, and a few contain relics of the earlier Iron Age. Another word, *vin* (meadow) can be referred by similar arguments to the third and fourth centuries A.D. and must indicate the homes of important families in what is called the Roman period of Norse antiquities. But even these are secondary settlements, implying still earlier centres which are found with uncompounded names; because the earliest stay-at-home population called their house simply 'the house', or by some natural feature which distinguished the site. And alongside of these simple and archaic names are not a few which cannot be explained by even the oldest Norse vocabulary; they must have been given in some ancient Germanic language by travellers or immigrants such as Shetelig has shown to have come into the country about 300 A.D. Geographical considerations also indicate the priority of such sites, and when Bronze Age remains are found upon them, the probability of their survival from very early times is argued, supporting the view advocated by Shetelig that the population of Norway has been continuous from the beginning.

Turning now to what our author calls in his title the 'Fanes', we note how many parishes have been named from heathen sites on very ancient farms where the goði or chief had a *hof* (temple). This word appears to have come into Norway about the seventh century, giving a limit to the date of these place-names. The *høgr* (altar of stones) usually preceded the temple; it was the primitive centre of the worship of Frey and other gods of fertility, served by priestesses, in the older form of Norse religion.

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And names in *haugr* (howe) connect with archaic cults of the dead, in the north of Norway; in some cases the finds at such howes take us back to the fifth or fourth century A.D.

This rough sketch of the contents gives a hint of the highly curious and fascinating study which is here opened out. To most it will break fresh ground; some of these excursions may seem to advance almost too boldly into the mist, but the careful and documented reasoning of Professor Magnus Olsen ought to encourage the reader to make the adventure under such able guidance.

W. G. COLLINGWOOD.

NOTES ON EXCAVATIONS OF PREHISTORIC AND LATER SITES AT MUIRKIRK, AYRSHIRE, 1913-1927. By ARCHIBALD FAIRBAIRN, F.S.A. SCOT. *Proceedings of the Society of Antiquaries of Scotland*, vol. LXI, 1927, pp. 269-289 (sketch-map of district, 4 miles = 3 inches, p. 271).

The *Proceedings* in which this paper is published reflect the character of the research which is flourishing in Scotland. It is of a very high order and is not confined to museums and libraries. Mr Fairbairn describes excavations on the Ayrshire moors, and gives a valuable record of field-work. The sites described consist mostly of hut-circles and cairns. By far the most interesting were the hut-circles which yielded beaker-pottery and which are attributed to the early Bronze Age. Curiously enough one of these was reinhabited in medieval times and yielded glazed potsherds. We note also with satisfaction that Mr Fairbairn (who we suspect has a good eye for such things) associates with a late medieval homestead some 'furrows of very early ploughing . . . still visible on the heather-covered land close by' (p. 274). The only criticism we have to make is the scarcity of plans of the sites dug. The sketch-map is a welcome complement to the paper.

WESSEX FROM THE AIR. By O. G. S. CRAWFORD and ALEXANDER KEILLER. With contributions by R. C. C. CLAY and ERIC GARDNER. Oxford: at the Clarendon Press. 1928. pp. xii, 264; 50 plates and 61 sketch-maps and figures. 50s.

This is the first book of its kind—a reproduction of 50 large photographic plates, taken from the air in the summer of 1924, of camps and many other archaeological features of Hants, Wilts, and Dorset.

But it is far more than this. It can fairly claim to be an introduction to the surface archaeology of the Chalk districts, for the authors give a general survey of the whole subject, written in plain un-technical language, as well as an interpretation, plate by plate, of the features shown by the Air Photographs themselves. There is also a short history and bibliography of Archaeology from the Air.

The introduction covers the chief kinds of earthworks illustrated in the book:—camps, prehistoric villages, ancient cultivation-systems and burial and other mounds. This does not however exhaust the list: in the course of the text many references will be found to earthworks which may be cattle enclosures, to long and short linear banks and ditches both formidable and slight, to the sites of Roman villas, to medieval enclosures, ancient roads and a host of other earth-marks which are at present frankly inexplicable. The section on Barrows is a useful summary, though the long account of 'pillow mounds' must be justified rather by the novelty of the subject than by the number of the examples illustrated by the plates.

It may be doubted if the explanation given of the two peculiar straight-sided mounds shown in the plate of Bokerly Dyke—that they are ordinary Long Barrows shaped by

ploughing along their sides—will hold its ground. Others of this peculiar railway-embankment type, Granbarrow and Knasbarrow, occur on Cranborne Chase, and there is one if not two on the down near Long Bredy in Dorset where the evidence of such ploughing is not clear. Moreover there are numbers of Long Barrows which are being ploughed out and yet retain their characteristic shape, so that it may well be that this little class of long straight mounds should not be grouped with Long Barrows at all. Like the inexplicable mounds shown on the plate of Steeple Langford Cowdown they should be placed on the suspense account.

The new weapon of Air Photography will assist the advance of Field Archaeology mainly along two lines :—it will discover new earthworks at present invisible, and it will complete, connect, and explain fragments hitherto incoordinated.

The most striking instance of new discovery is perhaps that of an old earthwork on Meon Hill near Stockbridge which is mentioned in a Saxon charter of 982. This being quite invisible from the ground was deliberately sought for from the air and it revealed itself, not by the darker shade of green which is the usual sign of the silted-up ditch, but by a brilliant semi-circle of scarlet poppies growing in a field of yellow oats!

But this is only one of many; Woodbury and Farley Mount are other striking examples of camps, and numerous examples of minor enclosures and other earthworks hitherto unknown appear in many of the plates.

Of the interpreting power of Air Photography perhaps Ebsbury and Pertwood are the most striking examples. In the former, two sections of strong double banks, now 400 yards apart, are shown to be parts of the continuous ramparts of a strong camp, the missing portion having been ploughed out or deliberately destroyed by Romano-British cultivation during the Pax Romana. At Pertwood, where a Roman Road runs amongst numerous lynchets, the air photograph makes it possible to disentangle the field system into a pre- and a post-Roman Road period.

The elucidation of the palimpsest of earthworks on the chalk has always been one of the most fascinating of problems. The superposition of one bank upon another may sound easy to detect from the ground, but certainty is in fact often impossible without the aid of excavation. Air Photography from its more comprehensive view-point will often explain such problems which are insoluble upon the spot. The demonstration of the Celtic field system lying underneath the Saxon—one of the first achievements of the new arm—was striking enough and appears upon nearly every plate; but there are other fields to conquer. An even earlier system is suggested by the plate of 'Wudu-burh' and the excavation described in connexion with it, and it may well be that traces of Bronze Age or even Neolithic cultivation may be revealed by the camera. There are many cultivation banks upon the downs which it is very difficult to fit in to either the Celtic or the Saxon systems.

One of the most important contributions of the book to the study of ancient fortified enclosures is the support given by the photographs and by the authors to the existence of more ancient and weaker camps upon the hill tops which have been obscured, partially incorporated with, and in some cases supplanted by, the more formidable structures of the Iron Age. The 'annexes' of Danebury and Bury Hill in Hampshire are well accounted for by this explanation, while the inner circles of Yarnbury and Scratchbury in Wiltshire, and the feeble camp on the neck of Hambledon Hill in Dorset are good examples of earlier camps. The frequent association of groups of Bronze Age Barrows and of Long Barrows with Iron Age camps has always been a puzzle, and it seems likely that the further problem of the settlements of these earlier people will have light thrown upon it

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by the excavation of these feeble camps—Knap Hill, Windmill Hill and the Trundle will not stand alone.

There are not many faults to be found with the book. More measurements of earthworks described, *e.g.*, the vertical height and the overall breadth of the 'strong triple ramparts' at Ebsbury, would be welcomed for comparison with well-known camps. The orientation of the plates, though doubtless difficult to arrange, might be better, those of Woodbury and Overton Down for instance are completely upside down, so that the reading of the shadows needs a little attention. The North-points are never marked upon the plates and those upon the explanatory diagrams are very inconspicuous. These too, as well as the numbers of the pages, are placed in the bottom right-hand corner instead of the top—a departure from convention which does not aid rapid reference. The explanatory diagrams are admirably clear and helpful; if they could have been all on the same scale for the sake of comparison they would have been perfect. But these are small matters—taken as a whole, it is difficult to see how in form or arrangement this sumptuous book could possibly have been improved. The Authors and the Publishers are to be congratulated upon their pioneer work.

J. P. WILLIAMS-FREEMAN.

RACE AND CIVILIZATION. By FRIEDRICH HERTZ, translated by A. S. LEVETUS and W. ENTZ. Kegan Paul, Ltd. 1928. pp. xii and 328. 18s.

Mr Hertz has read enormously, industriously, and uncritically. The result is a book which, while containing many quotations of interest, does so much more credit to the author's heart than to his head as to produce a feeling of mental confusion and malaise. There is nowhere any evidence that Mr Hertz has any first-hand knowledge of the primitive and savage peoples to whom he continually refers; moreover there are astonishing inaccuracies. The distinguished Cambridge psychologist mentioned on page 262 as having 'many years' study of the spiritual life of the natives of Australia and Africa' to his credit would certainly fail to recognize himself. Nor in the context can the work of Andrew Lang, who died in 1912, be said to be recent.

At the end of each chapter is a series of notes, but these constitute no adequate substitute for the absence of an index.

C. G. SELIGMAN.

ROYAL COMMISSION ON NATIONAL MUSEUMS AND GALLERIES:
INTERIM REPORT dated 1st September 1928. H.M. Stationery Office. pp. 64 and 3 plans. 2s.

Balaam the prophet was invited by Balak, King of Moab, to curse the Israelites and ended by blessing them. The Royal Commission appointed to investigate the position of our National Museums, and to consider in what way expenditure may be limited, has replied by an immediate and urgent recommendation that £779,000 shall be spent at once upon them, pending the issue of the final report. That the Commission should deem it necessary to issue such an Interim Report, containing so startling a recommendation, shows that the position is one of considerable urgency and anxiety.

Why, it may be asked, is so large an amount needed, and that directly? The reply would seem to be that the Treasury, as a body, does not appear to have realized its obligations to the National Collections, and in the words of the report; 'economy has already been pushed beyond the point of prudent administration'. Such a conclusion, arrived at after careful investigation and the calling of expert witnesses, constitutes a

grave indictment of a Public Department, and its seriousness is enhanced when we remember how our great Public Museums have come into being. They are national institutions, it is true, but their collections represent very largely the generosity of private benefactors, who have entrusted their 'cabinets' to the Nation for public good, and the benefit of students. This being so, a special responsibility rests with those whose duty it is to see that these collections are adequately housed, protected and preserved. But a trust of such magnitude must be financed and it is the absence of adequate grant that has made the recommendation of the Royal Commission so emphatic: 'the impression was borne in upon us at a very early stage of our inquiry that the National Museums and Galleries have for long been treated as the Cinderella of the Social Services'. It would be difficult to justify so short-sighted a policy, which is unworthy of the Nation which on the one hand accepts gifts, whose material and spiritual values are immense, and on the other hand compels them to be thrust into crowded storerooms, or cellars where they are little better than dead material and liable to deterioration. In the last five years it is computed that private donations to the British Museum have averaged £40,000 a year in value, while the Government purchase grant has been only £25,000 a year.

What are these urgent requirements? First of all comes the British Museum Library, with its daily accession of material under the Copyright Act. Here the actual weight of books is structurally affecting the building and removal of over 250 hanging presses is advised. It is impossible to secure newspapers for reference immediately; the reader may have to wait from two to nine days for them to be brought up by motor from Hendon. The Commission recommends the expenditure of £205,000 on the Library, and the concentration of all newspapers at Hendon, which will cost immediately £43,000. Nothing could be more reasonable.

An outstanding case of official parsimony is the condition of the Department of Ethnography, which is crowded 'to saturation, and is a reproach to our standing among other Nations'. This state of affairs is so serious that the Commission reserves it for the final report. It seems hardly credible that a Great Empire whose Dominions are so far flung, should be content to relegate the important subject of Ethnology, which affects millions of British subjects, to a single small gallery in an already overcrowded museum.

Nor are matters any better in the departments of natural history and geology. The important science of entomology, so intimately connected with human life itself, is overcrowded, and systematic study thereby retarded. For this and enlargement of the whale gallery an immediate sum of £133,000 is needed. Geology is in a worse condition still, the crumbling premises in Jermyn Street are actually propped up, so bad is their condition, and the number of visitors is falling because the scaffolding obscures the cases. This museum was condemned 30 years ago, and yet lingers on, deplorable and dangerous. Clearly the sane policy is to transfer the collection to South Kensington, and this will cost £220,000. It will concentrate material, and avoid overlapping, while releasing a very valuable site. Doubtless the Commission has more yet to say on the subject of the National Museums, but at all events it has already provided subject-matter for very serious present consideration.

Without hesitation the Commission, in dealing with Art Galleries, recognizes the woeful plight of the National Portrait Gallery, which for some time past has been so hopelessly crowded as to discourage the visitor. And yet, crowded as it is, the store rooms are full of unhung pictures. If we are to preserve the memory of our national

worthies, at least it should be done in a manner that befits the illustrious dead of a great nation. It is a disgrace for a gallery of this standing to be compelled to hang its portraits in three, or in some cases, four rows, with the top row far above the line of sight. Temporary measures such as the erection of screens, and the blocking of doors, and even windows, have been exhausted, and extension is imperative. The sum proposed for this is £40,000. While these words were being written, news arrived of Sir Joseph Duseen's magnificent offer to undertake the work proposed for the National Portrait Gallery by the Commission. In itself this is the most cogent criticism of the parsimony which has been so rigorously applied to our 'fountain heads of knowledge and art'. Where the nation has failed, the private donor once again steps in.

A small expenditure of £3,000 is urgently needed even in the Science Museum. There still remain nine other Public Museums, Galleries, etc. in London, of which nothing has been said as yet, but which will doubtless require to be set in order, to keep the national collections abreast of the times.

The state of affairs in Scotland appears to be serious too. The National Library of Scotland, as important as the British Museum, is in a bad case; it is described as chaotic, and its accommodation inadequate, in places 'not free from damp'. Such a state of things cannot continue; something must be done, and that quickly—the Commission estimates the immediate cost at £170,000. The Royal Scottish Museum too must be made fully fireproof throughout, at present only a portion is safe in this respect: for this £35,000 will be required.

In presenting these initial recommendations the Commission is careful to state very emphatically that 'we have had regard to the financial exigencies of the present time, and have concentrated solely on essential needs'. In other words, the time has come when the nation's museums and galleries must cease to be starved and neglected by Government departments bent on pennywise economy. The national treasures must not be risked by the piling up of vast arrears of building requirements. The Commission realizes to the full that it is the duty of the Treasury to say 'No' to proposals for increased expenditure unless they can be justified, but is likewise of opinion that in the present case it has discharged its duty with rigour. It would be interesting to know if the officials of the Treasury ever visited the museums and galleries in question before turning a deaf ear to the appeals made. Certainly it is fairly obvious to the bulk of those who frequent museums that the crying need of those institutions is not economy but expenditure.

Our national collections are in present danger; the sum recommended by the Commission is an irreducible minimum; and the work indicated ought to be set in hand immediately.

FRANK STEVENS.

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CORRIGENDA

Vol. 1, page 433, line 5, for 1086 read 1006

Vol. II:—

THE DISCOVERIES AT UR, by H. R. HALL

page 57, last line, *delete* not
 " 60, line 15, for 'Black Castle' read 'Black Earth'
 " 60, footnote 6, " Charbameaux " Charbonneaux
 " 61, line 18, " These are set " There are sets
 " 63 " 36, " 'polettes' " 'palettes'
 " 64 " 34, Dr Hall writes that Mr Woolley informs him that he has
 discovered socketed spearheads of this early period.

" 91 " 7, The *markhor* is a wild sheep, not a buffalo, as stated.
 " 97 " 6, The date of *The Times* should be 28 November.
 " 139 " 5, for fig. 2 read fig. 1
 " 205 " 21, " Clydogan " Clydogau
 " 207 " 22, " Heraclitus " Heraclius
 " 228 " 25, " 89 " 90

In the descriptive lettering on the plate facing page 192: for 'Nazzebah', read
 Mazzebah; 'alter', altar; 'Libration', Libation; 'Intrusine', Intrusive.

54c

"A book that is shut is but a block"

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